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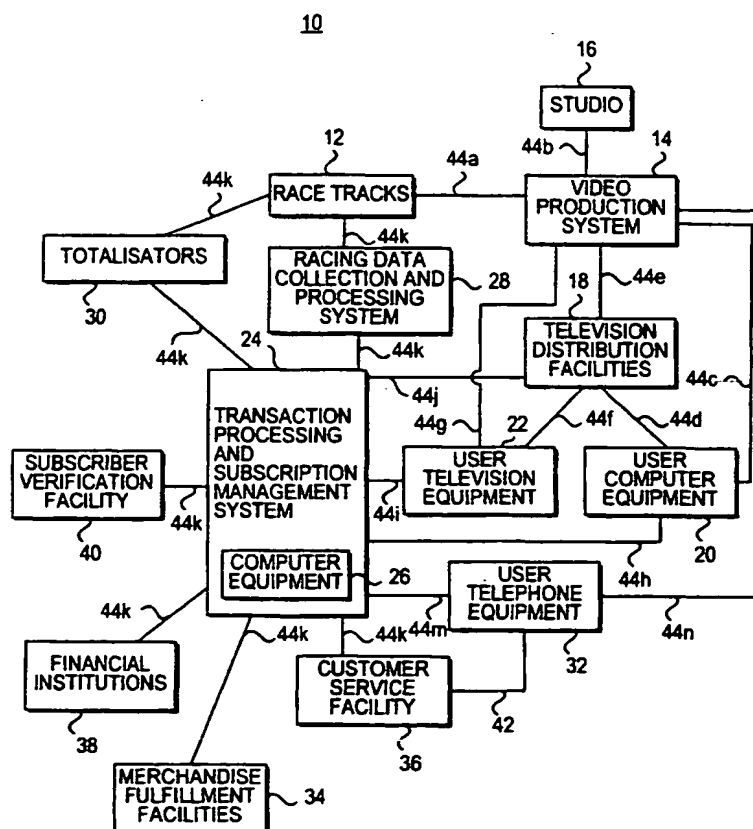
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- (74) Agents: PIERRI, Margaret, A. et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).
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09/642,752 21 August 2000 (21.08.2000) US
- (71) Applicant: ODS PROPERTIES, INC. [US/US]: 12421 West Olympic Boulevard, Los Angeles, CA 90064 (US).
- (72) Inventor: GARAH, Masood: 2802 North Torrey's Peak Drive, Superior, CO 80027 (US).
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- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR CONTROLLING TELEVISION DISTRIBUTION BANDWIDTH AND FOR UTILIZING REAL-TIME STATISTICAL WAGERING DATA



(57) Abstract: A system is provided in which video feeds are distributed to the user equipment of multiple users. Each user's equipment may be based on a set-top box and television or other user television equipment, a personal computer or handheld computing device or other user computer equipment, or a cellular telephone with a display or other user telephone equipment. The video feeds may be distributed to the user equipment using feed distribution equipment. The demand for the video feeds may be monitored. The distribution of the video feeds may be based on the demand. The user may be provided with opportunities to place wagers using the user equipment. Statistics related to users' wagers may be gathered in real time and various actions taken based on the statistics.

WO 01/78405 A3



**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
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# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04N7/173 H04H9/00 G06F17/60 G07F17/32 H04N5/445

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N H04H G06F G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	W0 94 14279 A (DISCOVERY COMMUNICAT INC) 23 June 1994 (1994-06-23)	1, 12, 13
Y	page 6, line 16 - line 24  page 16, line 7 - line 11 page 18, line 15 - line 18 page 43, line 15 - line 21 page 43, line 30 - page 44, line 1 page 46, line 26 - page 47, line 1 --- -/-	2-11, 14, 19-28, 32, 33, 35, 46, 53-58, 60-62, 66, 67, 69-74, 79-84, 89

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Dockhorn, H

## INTERNATIONAL SEARCH REPORT

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	abstract column 1, line 28 - line 33 column 1, line 53 - column 2, line 5 ---	1,10,11
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A	abstract column 1, line 13 - line 16 ---	1-3
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A	column 21, line 20 - line 37 ---	1,15-18
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/08320

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-13

Monitoring demand and managing distribution of video feeds

2. Claims: 14-18

Informing users and user services of availability of video feeds

3. Claims: 19-21,24,25,27-90

Wagering

4. Claims: 22,23,26

Video feeds concerned with (horse) racing

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information on patent family members

International Application No

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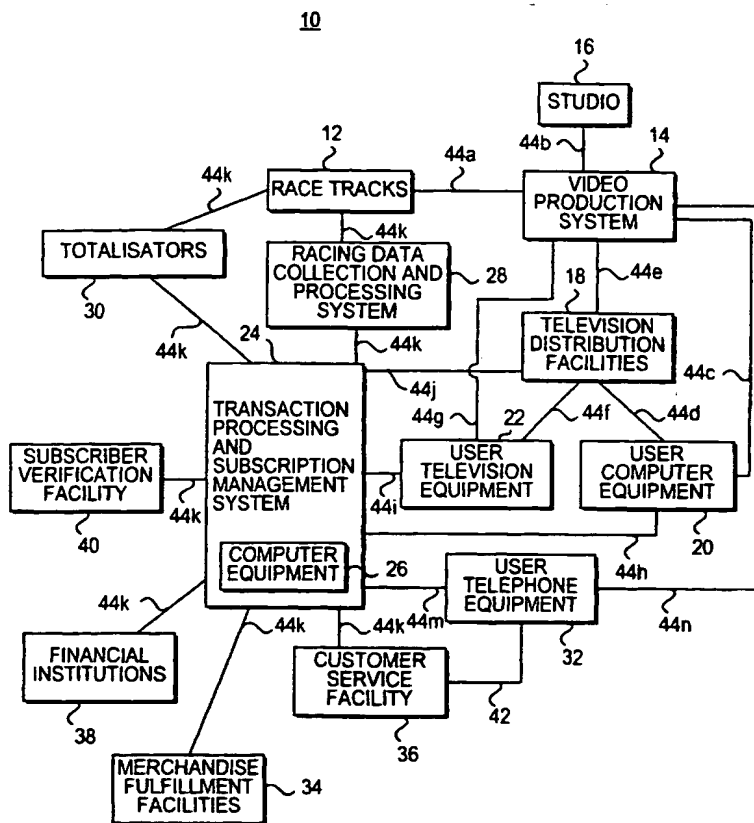
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- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: **SYSTEMS AND METHODS FOR CONTROLLING TELEVISION DISTRIBUTION BANDWIDTH AND FOR UTILIZING REAL-TIME STATISTICAL WAGERING DATA**



(57) Abstract: A system is provided in which video feeds are distributed to the user equipment of multiple users. Each user's equipment may be based on a set-top box and television or other user television equipment, a personal computer or handheld computing device or other user computer equipment, or a cellular telephone with a display or other user telephone equipment. The video feeds may be distributed to the user equipment using feed distribution equipment. The demand for the video feeds may be monitored. The distribution of the video feeds may be based on the demand. The user may be provided with opportunities to place wagers using the user equipment. Statistics related to users' wagers may be gathered in real time and various actions taken based on the statistics.

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**Published:**

- *without international search report and to be republished upon receipt of that report*

SYSTEMS AND METHODS FOR CONTROLLING  
TELEVISION DISTRIBUTION BANDWIDTH  
AND FOR UTILIZING REAL-TIME  
STATISTICAL WAGERING DATA

This application claims the benefit of U.S. provisional application No. 60/194,857, filed April 5, 2000, which is hereby incorporated by reference herein in its entirety.

5 Background of the Invention

This invention relates to interactive applications such as interactive television applications, and more particularly, to interactive television systems and interactive wagering systems in  
10 which bandwidth usage may be controlled and in which real-time wagering statistics may be gathered.

Advanced television systems may be used to distribute digital television and video-on-demand to home users. Some television channels or feeds may not  
15 be as popular as others. Although it is generally desirable to be able to provide television viewers with an ample selection of programming, supporting too many

unpopular television channels may be an inefficient use of system bandwidth.

Interactive wagering applications are available that allow users to place electronic wagers. 5 Wagering is a popular leisure activity. For example, many racing fans wager on events such as horse, dog, and harness racing. However, it may be inconvenient to attend racing events in person. Not all racing fans have sufficient time to visit racetracks as often as 10 they would like and some fans have difficulties in obtaining suitable transportation to the track. Off-track betting establishments are available for fans who cannot attend racing events in person, but fans must still travel to the off-track betting establishments.

15 As a result, interactive television wagering systems have been developed in which fans may place off-track wagers using set-top boxes connected to their televisions. Interactive wagering systems may also be provided that allow users to wager through a personal 20 computer or the like.

It is an object of the present invention to provide television systems in which the video feeds that are distributed to home users may be managed based on user demand.

25 It is another object of the present invention to provide interactive wagering systems in which statistical information on wagering activities is gathered.

#### Summary of the Invention

Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

5 Brief Description of the Drawings

FIG. 1 is a schematic diagram of an illustrative interactive wagering system with which an interactive wagering application may be implemented in accordance with the present invention.

10 FIG. 2 shows an illustrative main menu screen that may be provided to a user by an interactive wagering application in accordance with the present invention.

FIG. 3 shows an illustrative track selection  
15 screen that may be provided to the user when the user is creating a wager in accordance with the present invention.

FIG. 4 shows an illustrative race selection  
screen that may be provided to the user when the user  
20 is creating the wager in accordance with the present invention.

FIG. 5 shows an illustrative wager type  
selection screen that may be provided to the user when  
the user is creating the wager in accordance with the  
25 present invention.

FIG. 6 shows an illustrative horse selection  
screen that may be provided to the user when the user  
is creating the wager in accordance with the present  
invention.

FIG. 7 shows an illustrative wager amount selection screen that may be provided to the user when the user is creating the wager in accordance with the present invention.

5           FIG. 8 shows an illustrative wager queue screen that may be provided to the user to allow the user to submit created wagers and perform other functions in accordance with the present invention.

FIG. 9 shows the selection of a desired video  
10 feed from a list of available video feeds being presented to the user by the interactive wagering application in accordance with the present invention.

FIG. 10 shows an illustrative menu screen that may be presented to the user to allow the user to  
15 invoke various services such as a program listings service and an interactive wagering service in accordance with the present invention.

FIG. 11 shows the selection of a desired video feed from a program guide grid or the like in  
20 accordance with the present invention.

FIG. 12 is a schematic diagram showing how video feeds may be provided by multiple video production systems in accordance with the present invention.

25           FIG. 13 is a schematic diagram showing how feed distribution equipment at a distribution facility may be used to distribute videos to users in accordance with the present invention.

FIG. 14 is a flow chart of illustrative steps  
30 involved in monitoring video feed demand and in



distributing video feeds to users based on the demand in accordance with the present invention.

FIG. 15 shows an illustrative screen that may be presented to the user to provide the user with  
5 information on wagering statistics in accordance with the present invention.

FIG. 16 shows an illustrative screen that may be presented to the user to provide the user with graphical information on wagering statistics in  
10 accordance with the present invention.

FIG. 17 shows an illustrative alert message that may be presented to the user when real-time wagering statistics match user-specified criteria in accordance with the present invention.

15 FIG. 18 is a flow chart of illustrative steps involved in gathering and using real-time statistical information on wagering activities in accordance with the present invention.

#### Detailed Description of the Preferred Embodiments

20 An illustrative system 10 in accordance with the present invention is shown in FIG. 1. Aspects of the invention apply to various types of interactive application. For example, aspects of the invention apply to interactive television systems such as video-  
25 on-demand systems or interactive wagering systems that provide users with television or video content. Aspects of the invention also apply to interactive wagering systems. The invention is described herein

primarily in the context of interactive wagering on races (e.g., horse races) for specificity and clarity.

Races may be run at racetracks 12, which may be located at various geographic locations. Races run  
5 at the racetracks may be simulcast to television viewers. For example, simulcast videos may be provided to users with satellite receivers or to off-track betting establishments via satellite.

System 10 may be used to provide an  
10 interactive wagering service to users of various user equipment. An interactive wagering application may be used to provide the wagering service. The interactive wagering application may run locally on the user equipment (e.g., on a set-top box, personal computer,  
15 electronic book, cellular telephone, handheld computing device, etc.) or may run using a client-server or distributed architecture where some of the application is implemented locally on the user equipment in the form of a client process and some of the application is  
20 implemented at a remote location (e.g., on a server computer or other such equipment in the system) as a server process. These arrangements are merely illustrative. Other suitable techniques for  
implementing the interactive wagering application may  
25 be used if desired.

Real-time videos from racetracks 12 may also be provided to video production system 14 for distribution to users as part of a television wagering service (i.e., a wagering-related television channel or  
30 Internet-delivered service or the like). If desired,

multiple simulcast videos may be provided to video production system 14 in real-time. Talent (e.g., commentators) for the television wagering service provided by the interactive wagering application may be located at studio 16. Studio 16 may provide a video feed containing commentary and the like to video production system 14. Graphic overlays for the television wagering service (i.e., embedded graphics) may be added to the service at video production system 14.

The television wagering service may use video production system 14 to combine selected video segments from desired racing simulcasts with the video feed from studio 16 and suitable graphic overlays. If desired, video production system 14 or a separate facility may be used to reformat simulcasts from racetracks 12. For example, if racetracks 12 provide simulcasts as traditional analog television channels, video production system 14 (or a separate facility) may convert these simulcasts or portions of these simulcasts into digital signals (e.g., digital video signals) or into a different number of analog signals. Digital video signals may require less bandwidth than analog video signals and may be appropriate for situations in which videos are to be transmitted over either high or low bandwidth pathways. Low bandwidth pathways may include telephone lines, the Internet, etc.

Video production system 14 may be used to provide a television wagering service that includes

selected simulcast videos, video from studio 16, and graphic overlays to television distribution facilities 18 (for redistribution to user television equipment 22 and user computer equipment 20), to user computer  
5 equipment 20, and to user telephone equipment 32 (if user telephone equipment 32 has a display capable of displaying moving images). Television distribution facilities 18 may be any suitable facilities for supplying television to users, such as cable system  
10 headends, satellite systems, broadcast television systems, or other suitable systems or combinations of such systems. User computer equipment 20 may be any suitable computer equipment that supports an interactive wagering application. For example, user  
15 computer equipment 20 may be a personal computer. User computer equipment 20 may also be based on a mainframe computer, a workstation, a networked computer or computers, a laptop computer, a notebook computer, a handheld computing device such as a personal digital  
20 assistant or other small portable computer, etc. One aspect of the invention involves the use of an electronic book platform as user computer equipment 20 or part of user computer equipment 20.

Each of television distribution facilities 18  
25 is typically located at a different geographic location. Users with user television equipment 22 may receive the television wagering service from an associated television distribution facility. User television equipment 22 may include, for example, a  
30 television or other suitable monitor. A television may

be used to watch the television wagering service on a traditional analog television channel. User television equipment 22 may also include a digital or analog set-top box connected to a television distribution facility 5 18 by a cable path. A digital set-top box may be used to receive the television wagering service on a digital channel. If desired, user television equipment 22 may contain a satellite receiver, a WebTV box, a personal computer television (PC/TV), or hardware similar to 10 such devices into which set-top box capabilities have been integrated. A recording device such as a videocassette recorder or digital recording device (e.g., a personal video recorder or digital video recorder based on hard disk drives or the like) may be 15 used in user television equipment 22 to store videos. The recording device may be separate from or part of the other components of user television equipment 22.

User computer equipment 20 may receive the television wagering service using a video card or other 20 video-capable equipment to receive analog or digital (e.g., moving picture experts group or MPEG) videos from a television distribution facility. User computer equipment 20 may also receive the television wagering service directly from video production system 14 using, 25 for example, a modem link. If desired, the video for the television wagering service may be compressed (e.g., using MPEG techniques). This may be useful, for example, if the path to user computer equipment 20 is a modem connection using telephone links. If video 30 production system 14 is only used to serve user

computer equipment 20 without traditional analog television capabilities, video production system 14 may only need to supply such digitally-compressed video signals and not analog television signals.

5               Video clips of races and other simulcast information may be provided to users in the form of a television wagering service or by an interactive wagering service provided by the interactive wagering application. If desired, race-related videos may be  
10 provided to the user by using video production system 14 or other suitable equipment to route appropriate video clips from the simulcasts to the user in real time. Video clips may also be stored for later viewing. For example, one or more video servers  
15 located at racetracks 12, video production system 14, television distribution facilities 18, or other suitable locations may be used to store video clips. The stored videos may then be played back in real time or downloaded for viewing at user television equipment  
20 22, user computer equipment 20, or user telephone equipment 32. The video clips may contain videos of races, commentary, interviews with jockeys, or any other suitable race-related information. If desired, real-time or stored videos may be provided from  
25 racetracks 12 directly to user television equipment 22, user computer equipment 20, or user telephone equipment 32 over the Internet or other suitable communications paths without involving video production system 14. Videos may also be provided by routing video signals  
30 through equipment located elsewhere in system 10. For

example, videos may be routed through transaction processing and subscription management system 24.

Transaction processing and subscription management system 24 may contain computer equipment 26  
5 and other equipment for supporting system functions such as transaction processing (e.g., handling tasks related to wagers, product purchasing, adjusting the amount of funds in user accounts based on the outcomes of wagers, video clip ordering, etc.), data  
10 distribution (e.g., for distributing racing data to the users), and subscriber management (e.g., features related to opening an account for a user, closing an account, allowing a user to add or withdraw funds from an account, changing the user's address or personal  
15 identification number, etc.). Databases within transaction processing and subscription management system 24 or associated with system 24 may be used to store racing data, wagering data and other transaction data, and subscriber data such as such as information  
20 on the user's current account balance, past wagering history, individual wager limits, personal identification number, billing addresses, credit card numbers, bank account numbers, social security numbers, etc. Using such databases may allow the user to access  
25 information more quickly and allows for central administration of the wagering service.

If desired, racing videos and other services may be provided using servers and other equipment located at transaction processing and subscription  
30 management system 24. For example, video clips may be

provided to the user on-demand. Interactive advertisements may be provided to the user. When the user selects a desired advertisement, transaction processing and subscription management system 24 may  
5 provide additional information or other services related to the advertisement to the user.

Product ordering services may be implemented using computer equipment at transaction processing and subscriber management system 24 to handle orders and to  
10 assist in adjusting the appropriate account of the user accordingly. Orders may be fulfilled using merchandise fulfillment facilities 34. Merchandise fulfillment facilities 34 may be operated solely to provide  
15 independently-operated mail-order or on-line businesses. Similar facilities may be used to allow users to order services.

Statistical racing data such as the post times for each race, jockey names, runner names and the  
20 number of races associated with each track, handicapping information (e.g., information on past performances such as the number of wins and losses for the past year, etc.), and weather conditions at various tracks may be provided by racing data collection and  
25 processing system 28. Some of the data may be collected from racetracks 12 and some may be provided by third party information sources such as Axcis Pocket Information Network, Inc. of Santa Clara, California or other suitable data sources.



Racing data may also be provided from totalisators 30. Totalisators 30 are the computer systems that may be used to handle wagers made at the racetracks, made at off-track betting establishments, and made using interactive wagering system 10. Totalisators 30 generate wagering odds in real time. Totalisators 30 generate these odds based on information on which wagers are being placed (e.g., based on information on which wagers are being placed on races at racetracks 12). Totalisators 30 are available from companies such as Amtote International, Inc. of Hunt Valley, Maryland. Totalisators 30 may be associated with individual racetracks 12 or groups of racetracks 12. Totalisators 30 may communicate with one another using a communication protocol known as the Intertote Track System Protocol (ITSP). This allows totalisators 30 to share wagering pools. Totalisators 30 may provide racing data including information on the current races at racetracks 12, the number of races associated with each racetrack, win, place, and show odds and pool totals for each horse or other runner, and exacta, trifecta, and quinella payoff predictions and pool totals for every possible combination of runners. Totalisators 30 may also provide current odds and other real-time racing data for other types of wagers. Totalisators 30 may provide the time until post time for each race.

Totalisators 30 may provide race results, such as the order-of-finish list for at least the first three positions and payoff values versus a standard

wager amount for win, place, and show, for each runner in the finish list. Payoff values may be provided for winning complex wager types such as exacta, trifecta, quinella, pick-n (where n is the number of races  
5 involved in the pick-n wager), and daily double. The payoff values may be accompanied by a synopsis of the associated finish list.

Totalisators 30 may also provide program information of the type typically provided in printed  
10 racing programs. Such program information may include early odds, early scratches, race descriptions (including the distance of each race and the race surface - grass, dirt, artificial turf, etc.), allowed class ratings (based on a fixed ratio of external  
15 criteria), purse value (payoff to winning runner), allowed age range of runners, and the allowed number of wins and starts for each runner.

If desired, some of the information provided to transaction processing and subscription management  
20 system 24 by totalisators 30 (such as the program information or other suitable racing data) may be provided by racing data collection and processing system 28. Similarly, some of the information provided to transaction processing and subscription management  
25 system 24 by racing data collection and processing system 28 may be provided by totalisators 30. Moreover, the foregoing examples of different suitable types of racing data are merely illustrative. Any suitable data related to racing may be provided to

transaction processing and subscription management system 24 if desired.

Transaction processing and subscription management system 24 provides the racing data to users at user television equipment 22, user computer equipment 20, and user telephone equipment 32 for use in following race results and developing wagers. If desired, racing data may be provided to users using paths that do not directly involve transaction processing and subscription management system 24. For example, racing data may be provided from racing data collection and processing system 28 to user television equipment 22, user computer equipment 20, or user telephone equipment 32 using the Internet or other suitable communications paths.

User telephone equipment 32 may be a conventional telephone, a cordless telephone, a cellular telephone or other portable wireless telephone, or any other suitable telephone equipment. Users at user television equipment 22 and user computer equipment 20 may view information on the racing data on a television or other suitable monitor. Users at user telephone equipment 32 may listen to racing data using an interactive voice system. User telephone equipment 32 may be based on cellular telephones with displays. Users may view racing data displayed on such displays.

Users who wish to place wagers may establish an account at transaction processing and subscription management system 24. An account may also be established at one of totalisators 30. The user and

the interactive wagering services may have their own bank accounts at financial institutions 38. A user may set up an account electronically by using user television equipment 22, user computer equipment 20, or  
5 user telephone equipment 32 to interact with the subscriber management functions of transaction processing and subscription management system 24. If desired, accounts may be established with the interactive wagering service with the assistance of  
10 customer service representatives at customer service facility 36. Customer service facility 36 may be at the same location as transaction processing and subscription management system 24, may be part of system 24, or may be located remote from system 24.  
15 Customer service representatives at customer service facility 36 may be reached by telephone. If user telephone equipment 32 is used to access the interactive wagering service, for example, user telephone equipment 32 may be used to reach the  
20 customer service representative using communications path 42. If user television equipment 22 or user computer equipment 20 is being used with the service, a telephone at the same location as that equipment may be used to reach the customer service representative.  
25           The user's identity may be checked using social security number information or other identification information with the assistance of subscriber verification facility 40. The services of subscriber verification facility 40 are used to ensure  
30 that the user lives in a geographic area in which

wagering is legal, that the user is of a legal age, and that the identification information (e.g., the user's social security number) matches the name provided by the user. If the user is using a cellular telephone or  
5 handheld computing device, the user's present physical location may be determined by determining which general part of the cellular telephone network is being accessed by the user or by using the cellular network or a handset-based location device such as a global  
10 positioning system (GPS) receiver in the body of the cellular telephone to pinpoint the user's location. This location information may be used to verify that the user is located in a geographic area where wagering is legal.

15 In a typical enrollment process, the user provides personal information to the interactive wagering service and provides funds with a credit card or funds from the user's bank account. The interactive wagering service sets up an account for the user at  
20 transaction processing and subscription management system 24 and directs one of totalisators 30 to set up a new account for the user at the totalisator. The totalisator is also directed to credit the user's account to reflect the amount of funds provided by the  
25 user. After the user places a wager and wins or loses, the totalisator adjusts the user's totalisator account to reflect the outcome of the wager. The totalisator may periodically inform the interactive wagering service of the adjusted balance in the user's account.  
30 This may be accomplished using any suitable technique

(e.g., periodically, continuously, on-request, etc.).  
For example, reports may be collected periodically  
(e.g., once a day in an end-of-day report) and provided  
to the interactive wagering service to reconcile the  
5 account balances at transaction processing and  
subscription management system 24 with the account  
balances at totalisators 30.

If the user makes a balance inquiry, the  
inquiry may be passed to the appropriate totalisator by  
10 transaction processing and subscription management  
system 24. If the user is charged a fee for  
subscribing to the service, the service may debit the  
fee from the user's account at the transaction  
processing and subscription management system 24.

15 The accounts at totalisators 30 and  
transaction processing and subscription management  
system 24 are typically maintained separately, because  
the business entities that operate totalisators 30 and  
transaction processing and subscription management  
20 system 24 are independent. If desired, financial  
functions related to opening and maintaining user  
accounts and the like may be handled using computer  
equipment at another location such as one of financial  
institutions 38 or other location remote from  
25 totalisators 30 and system 24. Such financial  
functions may also be implemented primarily at a  
totalisator 30 or primarily at the transaction  
processing and subscription management system 24 if  
desired.

Users at user television equipment 22, user computer equipment 20, and user telephone equipment 32 may place wagers by providing wagering data and otherwise interacting with transaction processing and subscription management system 24. The interactive wagering service may provide a user at user television equipment 22, user computer equipment 20, or user telephone equipment 32 that has display capabilities with screens containing various racing data. For example, the user may be presented with screens that allow the user to view the current odds for horses in an upcoming race at a given track.

The service may provide the user with interactive screens containing menus and selectable options that allow the user to select a desired racetrack and race on which to wager. The user may also specify the type of wager in which the user is interested, the desired wager amount, and the horse(s) for the wager. When the user has finished creating the wager, the wager may be submitted to transaction processing and subscription management system 24 for processing.

The user may make selections during the creation and placing of wagers using various arrangements. With an electronic book arrangement, for example, the user may press dedicated buttons on the electronic book or may select on-screen options by touch or by using handwriting recognition. With a set-top box arrangement, the user may use a remote control or wireless keyboard to navigate the various menus and

selectable options. With a personal computer, the user may use a keyboard, mouse, trackball, touch pad, or other suitable input or pointing device. With a cellular telephone with a display, the user may use  
5 buttons on the telephone. When the user has made appropriate selections to define a desired wager, the user television equipment, user computer equipment, or user telephone equipment may transmit wagering data for the wager to transaction processing and subscription  
10 management system 24.

Users with telephones may also interact with the service using an interactive voice response system located at transaction processing and subscription management system 24. The interactive voice response  
15 system may present menu options to the user in the form of audio prompts (e.g., "press 1 to select a \$2 wager amount," etc.). The user may interact with the service by pressing the corresponding buttons on a touch tone telephone. User telephone equipment 32 that is based  
20 on cellular telephones allows the user to interact with the wagering service in this way. User telephone equipment 32 that is based on cellular telephones with messaging and display capabilities also allows the user to interact visually with the interactive wagering  
25 service.

The components of system 10 may be interconnected using various communications paths 44. Communications paths 44 may include satellite paths, coaxial cable paths, fiber-optic paths, twisted pair  
30 paths, other wire or cable-based links, wireless paths



through free space, or any other suitable paths or combination of such paths. Communications over paths 44 may involve analog transmissions, digital transmissions, wireless transmissions, microwave transmissions, radio-frequency transmissions, optical transmissions, audio transmissions, or any other suitable type of transmissions or combination of such transmissions. Communications may involve Internet transmissions, private network transmissions, packet-based transmissions, television channel transmissions, transmissions in the vertical blanking interval of a television channel or on a television sideband, MPEG transmissions, etc. Communications may involve wireless pager or other messaging transmissions.

Communications paths 44 may include cable connected to cable modems, digital subscriber lines, integrated services digital network (ISDN) lines, or any other suitable paths. Examples of suitable communications paths are described below. Those examples are, however, merely illustrative. Any of the communications path arrangements described above or other suitable arrangements may be used if desired.

Communications paths that carry video and particularly uncompressed analog video or lightly-compressed or full-screen digital video generally use more bandwidth than communications paths that carry only data or that carry partial-screen digital video. For example, if it is desired to transmit high-quality simulcasts of races from racetracks 12 to video production system 14, analog or digital videos may be

transmitted from racetracks 12 to video production system 14 over path 44a using satellite links. Video may be transmitted from studio 16 to video production system 14 over path 44b using a satellite link or a  
5 high-speed terrestrial path such as a fiber-optic path. Studio 16 may also be located at the same site as video production system 14, thereby avoiding the need for a long-haul transmission path. Videos may be transmitted from video production system 14 to user computer  
10 equipment 20 over path 14c using a modem link (using, for example, a digital subscriber line, a telephone network link, a wireless link etc.) The modem link may be made over a private network.

A user with a cable modem may connect a  
15 personal computer or other user computer equipment 20 to an associated cable system headend using path 44d. (The headend in such an arrangement would be one of the television distribution facilities 18 shown in FIG. 1.) The user may then receive videos from the headend via  
20 cable modem. Videos may be provided to the headend over path 44e using a network link, fiber optic links, cable links, microwave links, satellite links, etc. A user with a set-top box or similar device (shown in FIG. 1 as user television equipment 22) may also  
25 receive videos from a cable system headend using a cable modem or other such communications device over path 44f. In addition, a user with user television equipment may receive videos over the Internet or a private network using a telephone-based modem or other  
30 such communications device using path 44g. In a system

with distributed processing, interactive wagering services may be provided using a television distribution facility 18 that includes equipment that supplements or replaces at least some of the equipment  
5 at transaction processing and subscription management system 24.

If desired, user television equipment 22 or user computer equipment 20 may receive analog or digital videos from an associated television  
10 distribution facility over the communications paths normally used to distribute television programming (e.g., paths 44f and 44d). For example, videos may be received as part of a dedicated interactive wagering service television channel. If videos are provided as  
15 digital signals (e.g., MPEG signals), 10 or more digital videos may be carried on a single analog channel (or one digital video may be carried on one-tenth of the bandwidth of an analog channel). If the videos are not full-screen videos, even more videos may  
20 be simultaneously provided without a loss of image quality.

Racing videos may be provided to user telephone equipment 32 over a partially-wireless telephone Internet link or other telephone link using  
25 path 44n.

If desired, racing data may accompany the racing videos along any of these paths. Moreover, racing videos may be provided by routing them directly from racetracks 12 to user television equipment 22,  
30 user computer equipment 20 (e.g., over the Internet or

a private network, etc.), or user telephone equipment  
32. Racing videos may also be provided by routing them  
through transaction processing and subscription  
management system 24. If a cellular telephone or  
5 portable computing device has sufficient display  
capabilities to support moving images, racing videos  
may be displayed. Such videos may be provided using  
any suitable path, such as a direct path from  
racetracks 12, a path through video production system  
10 14 or other suitable video processing equipment,  
through a hub such as transaction processing and  
subscription management system 24, etc. Racing videos  
may be provided in real time or may be recorded for  
later distribution. Videos that are not provided in  
15 real-time may be downloaded by user television  
equipment 22, user computer equipment 20, a cellular  
telephone, or other suitable user equipment at a lower  
data rate than would otherwise be required and may be  
downloaded in the background if desired. Such videos  
20 may also be provided to the user at real-time video  
rates for direct viewing by the user.

Racing data and other information related to  
the interactive wagering service may be provided to  
users over paths connected to transaction processing  
25 and subscription management system 24. For example,  
racing data and other data for the service may be  
provided to user computer equipment 20 over path 44h  
using a modem link. Path 44h may be a private network  
path or an Internet path. Path 44h may use telephone  
30 lines, digital subscriber lines, ISDN lines, wireless

data paths, or any other suitable type of communications links. User television equipment 22 may receive data for the wagering service over communications path 44i, which may be a telephone line, 5 digital subscriber line, ISDN line, or other suitable type of communications path and which may use a private network path or an Internet path, etc.

Data for the wagering service may be provided to users of the interactive wagering application via 10 communications path 44j and paths 44f and 44d. Communications path 44j may be provided over a private network, using the public telephone network, using satellite links, or any other suitable type of links. Data from paths such as path 44j may be routed to paths 15 such as paths 44f and 44d directly by associated television distribution facilities 18, or may be buffered at television distribution facilities 18 if desired. Paths 44f and 44d may include coaxial cable and use of paths 44f and 44d may involve the use of 20 cable modems or the like. If data is provided over path 44j and path 44f or path 44d using an Internet protocol, a web browser or similar software running on user television equipment 22 or user computer equipment 20 may be used to access the data. Such software may 25 be integrated into the interactive wagering application or may be used separately. Software may also be used to view videos and may be used on other platforms (e.g., advanced cellular telephones) if desired.

The communications paths 44k that are used to 30 connect various other components of the system

typically do not carry high-bandwidth video signals. Accordingly, paths 44k may be telephone-like paths that are part of the Internet or a private network. Such paths and various other paths 44 may be dedicated  
5 connections for security, reliability, and economy.

User telephone equipment 32 may receive information for the wagering service via path 44m. If user telephone equipment 32 is a standard (non-cellular) telephone, such information may be in the  
10 form of audio prompts ("press 1 to place a wager") and audio racing data ("the current win odds for horse 2 are 5-1"). Transaction data processing and subscription management system 24 may contain  
15 interactive voice response equipment that provides such information to the user and that responds to touch-tone signals from the user when the user responds to prompts by pressing buttons on the user's telephone.

If user telephone equipment 32 is a cellular telephone, racing data and other information for the  
20 interactive wagering service may be provided to the user by using a cellular wireless connection as part of path 44m. Users with cellular telephones may be provided with audio prompts using an interactive voice response system located at transaction processing and  
25 subscription management system 24 to which the users may respond by pressing cellular telephone buttons to generate touch-tone signals.

Racing data and other information for the interactive wagering service may be provided to  
30 cellular telephones in the form of alphanumeric

messages. Such messages may be transmitted to the user by using paging or other alphanumeric messaging formats or any other suitable data communications scheme. If desired, data may be provided to the cellular  
5 telephones over the voice channel and decoded by the cellular telephone using modem circuitry or other suitable circuitry. Data may also be provided using any other suitable cellular or wireless path. Regardless of the way in which racing data and other  
10 information for the interactive wagering service are provided to the cellular telephone, such information may be provided to the user by displaying it on the cellular telephone display screen or by presenting it in audible form through the speaker of the cellular  
15 telephone..

Racing data and other interactive wagering service information for the users may be provided in one or more continuous data streams, may be provided periodically (e.g., once per hour or once per day), or  
20 may be provided using a client-server arrangement in which data is requested by a client processor (e.g., user television equipment 22, user computer equipment 20, user telephone equipment 32, or any other such equipment) from a server (e.g., a server implemented  
25 using computer equipment 26 at transaction processing and subscription management system 24 or computer equipment at another suitable location). Videos may also be provided using any of these techniques.

A return communications path between the user  
30 and the interactive wagering service may be used to

allow the user to place wagers and otherwise interact with the interactive wagering service. For example, a user with a standard telephone or a cellular telephone may interact with the service by pressing touch-tone  
5 keys on the telephone in response to audio prompts provided by an interactive voice response system at transaction processing and subscription management system 24. If desired, users may call customer service  
10 representatives at customer service facility 36 and place wagers with manual assistance. The user of a cellular telephone may interact with the wagering service by selecting menu options and otherwise interacting with information displayed on the cellular  
15 telephone. When a selection is made, software implemented on the telephone may be used to assist the user in transmitting appropriate data (e.g., wagering data) to the wagering service. Such data may be transmitted using any suitable technique. For example,  
20 data may be transmitted using a wireless data link that is separate from the cellular voice channels. Data may also be transmitted over the voice channel (e.g., using a modem built into the cellular telephone, by automatically generating touch-tone signals that may be recognized by the interactive voice response system at  
25 transaction processing and subscription management system 24, or using any other suitable arrangement). These approaches may be used even if the user receives racing data and other information for the service using a platform other than a telephone-based platform.



Users with user television equipment 22 may interact with the service by sending data (e.g., wager data) to transaction processing and subscription management system 24 using path 44i or using paths 44f and 44j. Users with user computer equipment 20 may send data (e.g., wager data) to transaction processing and subscription management system 24 via path 44h or paths 44d and 44j. Users at any user equipment may send data for the service to locations other than transaction processing and subscription management system 24. For example, the user may provide information directly to customer service facility 36, etc.

If desired, the user may send data to the service at transaction processing and subscription management system 24 using different paths than those used to receive data from transaction processing and subscription management system 24. For example, racing data may be received at user television equipment 22 via paths 44j and 44f, whereas data may be sent by the user from user television equipment 22 to transaction processing and subscription management system 24 using path 44i, etc. Moreover, the paths used to receive certain video information may be different from those used to receive racing data. For example, user television equipment 22 may receive racing videos using path 44f, but may receive racing data using path 44i. These examples are merely illustrative. Any suitable combination of paths may be used to distribute racing data and other information for the interactive wagering

service, any suitable combination of paths may be used to receive videos, and any suitable combination of paths may be used to send data to the wagering service.

If desired, the user may interact with the  
5 wagering service using more than one platform. For example, the user may place a wager using a cellular telephone while the user is driving home. When the user arrives home, the user may determine the outcome of the wager by watching a video of the race on user  
10 television equipment. Later in the day, the user may check the user's account balance using a personal computer. This is merely an illustrative example. The various wagering platforms may be used in any suitable combination.

15 Although system 10 has been described in the context of a system that supports multiple wagering platforms, system 10 may support fewer platforms if desired. For example, aspects of the invention may be implemented using a system 10 that only supports  
20 wagering from set-top boxes. If desired, system 10 may be configured so that it does not support wagering with telephone or computer equipment. The system may support electronic books, personal computers, cellular telephones and/or handheld computing devices such as  
25 personal digital assistants, palm-sized computers, etc. in combination with any other suitable platforms. Moreover, the features of the system may be applied to any suitable type of interactive television application including video-on-demand applications, interactive  
30 television program guides, home banking applications,

home shopping applications, game applications (e.g., multiplayer gaming applications, etc.), Internet browsing applications, etc.

The features of the present invention are described herein primarily in the context of an interactive wagering application implemented on user equipment such as a set-top box connected to a television. This is only illustrative. An interactive wagering application implemented on any suitable platform (user computer equipment, user television equipment, user telephone equipment, etc.) may be used to provide such features if desired. In set-top box arrangements, on-screen options may be made larger than they appear in computer-based arrangements to accommodate the greater viewing distance from which televisions are typically operated. Options may be selected by highlighting them using remote control arrow keys and by pressing an appropriate key such as an OK or enter or select key. In personal computer arrangements, on-screen options may be selected by clicking on a desired link or option using a mouse or other pointing device. In cellular telephone arrangements and handheld computer arrangements, options and information may be displayed using smaller screens than are typically available on personal computer or set-top box arrangements. To accommodate the smaller screen size, options that might otherwise be presented on a single screen may be displayed using multiple screens or layered menus. Options may be selected by highlighting them using navigation keys and

pressing an appropriate select button on the cellular telephone or handheld computing device or by using a pen-based interface or the like.

The interactive wagering application may be implemented using application software that runs primarily on user television equipment, user computer equipment, user telephone equipment, or another local platform, or using a remote server or other computer that is accessed from the local platform. Arrangements in which interactive wagering services are implemented using software on remote computers that is accessed on-demand from local platforms may be referred to as client-server arrangements. Such client-server arrangements may be used to allow client processes on set-top boxes or other platforms to access server processes running on servers located at cable system headends or other television distribution facilities (FIG. 1). Regardless of the type of system architecture or platform used, the software that supports the interactive wagering service features described herein may be referred to as an interactive wagering application. Software that supports the video feed monitoring and wagering statistics gathering features of the present invention in contexts including interactive wagering and other applications (e.g., interactive television applications other than wagering-based interactive television applications) may be referred to as an interactive television application.

In a set-top box environment, the system may allow the user to launch an interactive wagering application by selecting a menu option in an interactive television program guide or other set-top box application or menu. If desired, the interactive wagering application (or other application) may be launched automatically whenever the user tunes to a particular channel (e.g., the television wagering channel). After the user has tuned to this channel, the system may display an interactive icon on the user's television screen that indicates that the interactive wagering application is available. If the user presses an "OK" remote control key, the system may launch the application.

In a computer-based system, the user may access the interactive wagering application by browsing to an Internet web site or a site on a private network or by otherwise connecting to computing equipment such as computing equipment 26 of transaction processing and subscription management system 24 (FIG. 1) or other suitable computer equipment.

Systems based on cellular telephones or the like may be launched by selecting an appropriate on-screen menu option presented on the display of the cellular telephone.

When launched, the interactive wagering application may display a main menu as an overlay on top of the video currently being viewed by the user. As shown in FIG. 2, for example, the interactive wagering application may display menu region 46 on top

of video 48 in screen 50. If desired, the interactive  
wagering application may display menu information as a  
wrap-around text or graphics region that surrounds a  
reduced-size video window. Video such as video 48 may  
5 be displayed in such a reduced-size window.

Menu region 46 or other suitable menu  
arrangement may be used to provide the user with  
various selectable options. For example, option 52 may  
be used to provide the user with an opportunity to  
10 create an electronic wager. The user may select  
results option 54 when the user desires to view race  
results or the like. Selections may be made by using  
remote control arrow keys or other suitable arrangement  
to position a highlight region such as highlight region  
15 56 on top of a desired option and by pressing a remote  
control OK key or the like.

Option 58 may be used to display handicapping  
information such as jockey statistics, horse  
statistics, information regarding races, and other such  
20 historical information.

Statistics option 60 may be used to access  
real-time statistical information on the wagering  
activities of the users of system 10.

Setup option 62 may be used to access options  
25 that allow the user to adjust various settings such as  
how and when information is presented to the user,  
hardware configuration settings, default presentation  
styles, etc.

Video feeds option 64 may be used to select a  
30 desired video feed to view. The video feeds may, for

example, be associated with different television wagering services or with video racing coverage from different racetracks or different vantage points, etc.

The user may create a wager by selecting  
5 option 42. An illustrative screen 66 that may be presented to the user (e.g., on the display of the user's equipment) when the user selects option 42 is shown in FIG. 3. Screen 66 and other wager creation screens may be provided by the interactive wagering  
10 application.

Screen 66 and other screens provided by the interactive wagering application may include a logo 68 for the provider of the interactive wagering service. Information 70 may be provided to describe the actions  
15 that the user should take on each screen.

The user may select a desired racetrack by positioning highlight region 74 on top of a desired racetrack option 72 on screen 66 using remote control arrow keys and by pressing a remote control OK or  
20 select button.

When the user has selected a racetrack at which to wager, the user may be presented with a screen such as screen 84 of FIG. 5. Screen 84 may be used to select a desired wager type for the user's wager. The  
25 user may select a wager type by selecting an appropriate wager type option 86 using repositionable highlight region 88 and an OK key or the like.

When the user has selected a desired wager type for the wager, the user may be presented with a  
30 screen such as screen 90. Screen 90 allows the user to

select the runner or runners for the wager. The user may select horses for the wager by selecting appropriate horse options 92 using highlight region 94. As indicated by arrow 96, the user may use remote  
5 control arrow keys or the like to scroll to additional horse options 92.

The user may be presented with a wager amount selection screen such as screen 98 of FIG. 7 after the user has selected the desired horses for the wager.  
10 With the arrangement of FIG. 7, the user may select the desired wager amount for the wager from wager amount options 100. Highlight region 102 may be used to make the wager amount selections.

When the user has selected the desired wager  
15 amount, the user may be presented with a screen such as screen 103 of FIG. 8. Screen 103 may include information 104 on the wagers that the user has created but has not yet submitted for processing. For example, information 106 may be included on a win wager the user  
20 has created for a race at the Aqueduct track and information 108 may be included on a trifecta wager the user has created for a race at the Gulfstream track. Information 106 and 108 may include information on each wager's racetrack, race, wager amount (e.g., per  
25 runner), wager type, horse(s), and total wager amount (e.g., based on all selected runners).

When the user is ready to submit the wagers in the wager queue to transaction processing and subscription management system 24 for processing, the  
30 user may select send option 110 using highlight region



112. Option 114 may be selected when the user desires to create a new wager. Option 116 may be selected when the user desires to view additional information for a highlighted wager in the queue. Option 118 may be used  
5 to create a duplicate wager for a highlighted wager in the queue. The user may select delete option 120 when the user desires to delete a wager that has been highlighted using highlight region 112. The user may view the results for the races for which the user has  
10 submitted wagers by selecting option 54 of FIG. 2.

The user may be provided with an opportunity to select from various available video feeds. For example, the user may be provided with an opportunity to select a desired video feed for viewing from among  
15 various video feeds associated with different wagering service providers, associated with different racetracks, or associated with any other suitable entities. Any suitable arrangement may be used to provide the user with an opportunity to select desired  
20 video feeds for viewing.

If, for example, the user selects option 64 of FIG. 2, the interactive wagering application may present the user with a screen such as screen 122 of FIG. 9. The user may select from video feed options  
25 124 using highlight region 126.

Some of the video feed options may correspond to video feeds that are associated with a television wagering service (i.e., a wagering-related television channel when the user's equipment is user television  
30 equipment or an Internet-delivered service or the like

when the user's equipment is user computer equipment or user telephone equipment). For example, the video feed options "TVG East" and "TVG West" in the arrangement of FIG. 9 may correspond to wagering-related television channel services that include commentary, racing video clips, interviews, etc. TVG East may be a video feed that is most appropriate for one geographic region (e.g., the east coast) and TVG West may be a video feed that is most appropriate for another geographic region (e.g., the west coast). Video feeds such as TVG East and TVG West may be produced, for example, at video production systems such as video production system 14 of FIG. 1. Video feed options such as the "Churchill Downs" option may correspond to video feeds that are associated with particular tracks. Such feeds may be produced at a video production system such as video production system 14 of FIG. 1 or a video production system located at or associated with a particular racetrack. These are merely illustrative examples. Video feeds may be generated at any suitable facility.

Moreover, video feeds may be associated with any suitable entity, such as a wagering service provider, a racetrack, a news service, etc. In interactive television arrangements that do not involve wagering such as general video-on-demand or pay-per-view arrangements or the like, the user may be provided with opportunities to select from different available video feeds to, for example, choose between different camera angles at a sporting event, to view movies that

start at slightly different start times, to view broadcast television content, etc.

As shown in FIG. 9, when a user selects a given video feed option from screen 122, the  
5 interactive wagering application may automatically tune to the desired video feed and the desired video feed may be displayed in screen 128.

Another way in which the user may choose from available video feeds is through an interactive  
10 television program guide or the like. A navigational shell application or other suitable application (e.g., an interactive television program guide or other interactive television application or an operating system, etc.) may be used to display a menu screen such  
15 as screen 130 of FIG. 10.

Screen 130 may include an overlay region 132 or other suitable region that includes menu options. Menu option 134 may be used to access an interactive television program guide. Option 136 may be used to  
20 access home shopping functions. Option 138 may be used to access video-on-demand services. Option 140 may be used to access the interactive wagering application. The menu options shown in the arrangement of FIG. 10 are merely illustrative. Any suitable interactive  
25 applications may be accessed using such a menu structure if desired.

If the user selects program listings option 134, an interactive television program guide may be invoked. A screen such as screen 142 of FIG. 11 may be  
30 displayed for the user by the interactive television

program guide when the program guide is first invoked. Other program guide functions (e.g., functions related to setting reminders, recording program, ordering pay-per-view movies, searching for program listings by  
5 category, etc.) may be accessed by using dedicated remote control keys or by interacting with menu options displayed on the user's equipment.

Screen 142 may contain a program listings grid 144 or other suitable list or display of program  
10 listings 146. The user may select a desired program listing using highlight region 148. If the user selects a program listing such as the program listing for program 6 on the channel "TVG East," the user's equipment may be automatically tuned to the video for  
15 the TVG East video feed, as shown in screen 150 in the lower half of FIG. 11.

Regardless of how the user may access video feed content, the video feeds may be distributed to the user through a distribution facility such as television  
20 distribution facility 18 of FIG. 1 or other suitable distribution facility (e.g., from a server at video production system 14 of FIG. 1).

As shown in FIG. 12, video feeds 152 may be gathered at a distribution facility 154 from multiple  
25 video production systems 156. For example, different video production systems such as systems 14 of FIG. 1 may each transmit a digital television feed to a facility such as facility 154 over a satellite link or the like. Feeds may also be provided to facility 154  
30 from racetracks or other such video sources.

The feeds may be multiplexed at distribution facility 154 and distributed to the user equipment 160 of multiple users over communications paths 158 as shown in FIG. 12. Communications paths 158 may include  
5 fiber optic paths, satellite paths or other wireless paths, cable paths, telephone line paths, or any other suitable communications paths. For example, communications paths 158 may be cable paths connecting a television distribution facility such as a cable  
10 system headend to user equipment such as television set-top boxes.

As shown in FIG. 13, distribution facility 154 may include feed distribution equipment 162 for controlling the distribution of video feeds to user  
15 equipment 160. The video feeds may be, for example, MPEG-2 video streams or other digital video streams that are distributed by MPEG-based distribution equipment. Distribution equipment 162 may distributed all of the video feeds 152 that are provided to  
20 distribution facility 154 or may distribute a subset of such feeds (e.g., some or none of such feeds).

If desired, only those feeds that are popular or that may be easily supported by the available bandwidth of the system (e.g., that may be transmitted  
25 over paths 158 without causing system congestion or overflow) may be transmitted to the users by feed distribution equipment 162.

As an example, if no users or only a few users are currently viewing the video feed for the  
30 Calder racetrack, feed distribution equipment 162 need

not transmit that video feed to user equipment 160.  
The bandwidth that would have been used to support this  
video feed may therefore be made available for other  
video feeds or for increasing the quantity or quality  
5 of the video information provided to the user in other  
video feeds.

The decision as to which video feeds are to  
be distributed may be made based on any suitable  
bandwidth allocation criteria, including minimum  
10 service guarantees, user demand, current bandwidth  
resources, etc.

Illustrative steps involved in monitoring the  
demand for various feeds and in providing feeds to  
users are shown in FIG. 14. At step 164, the demand  
15 for feeds 152 (FIG. 13) may be monitored by the system.  
For example, distribution facility 154 may poll user  
equipment 160 to determine which video feeds are  
currently being viewed by users or are likely to be  
viewed at substep 166. At substep 168, the channel  
20 change commands of the user equipment 160 may be  
monitored by distribution facility 154. For example,  
if video feeds are being provided to users using a  
client-server arrangement in response to channel change  
commands that are transmitted to a server at the  
25 distribution facility 154 or the like, the server  
application at the distribution facility 154 may  
determine which video feeds are being viewed by  
monitoring which video feeds have been requested by  
sending channel change commands from the user  
30 equipment. At substep 170, the pay-per-view orders of

various users may be monitored. This allows the distribution facility to gauge user demand for different video feeds based on which video feeds users have requested using, for example, an interactive  
5 program guide pay-per-view function, an interactive wagering application racing video order function, etc. Substep 172 involves monitoring the user's interactions with an interactive television application such as an interactive television program guide, a video-on-demand  
10 application, an interactive wagering application, etc. These interactions may be indicative of the user's interest in certain video feeds. For example, such interactions may indicate when a user has chosen to set up a future recording for a given video feed or when  
15 the user has requested a video feed on demand.

Substeps 166, 168, 170, and 172 are merely illustrative. Any suitable techniques may be used to monitor demand for the video feeds in system 10. Moreover, such substeps may be used regardless of  
20 whether the interactive television application that is providing the video feeds or that is facilitating the delivery of such feeds is an interactive wagering application, an interactive television program guide, or any other suitable application, operating system  
25 function, etc.

At step 174, the distribution facility 154 (FIG. 13) may use feed distribution equipment 162 or other suitable equipment to manage the distribution of the video feeds to user equipment 160 based on the  
30 information on the video feed demand that was gathered

at step 164. For example, if it is determined at step 164 that no users or relatively few users are viewing or otherwise using a given video feed, the feed distribution equipment 162 may not include that video feed in the video feeds that are distributed to the users over paths 158. This frees up bandwidth over paths 158 that would not otherwise be available. The released bandwidth may be used to support higher data rates for the remaining feeds, may be used to support other feeds, may be used to reduce the bandwidth requirements for paths 158, etc.

At step 176, the user may be informed when certain feeds are not available. For example, if a feed has been made unavailable due to low demand, an indication to this effect may be displayed for the user in the interactive wagering application, the interactive television program guide, or other suitable interactive television application. If desired, the feed may be dropped in the background so that users never need know that certain feeds are unavailable.

If feeds are made unavailable and it is desired to inform the users of their unavailability or to remove them from the video feed offerings presented to the user, the program schedule information that is used for presenting the listings in grid 144 of FIG. 11 or the video feed options 124 of FIG. 9 may be updated. Program listings information may be stored locally in the user's equipment or may be stored on a remote server or the like. If program listings information is stored locally, the update of step 176 may involve



transmitting new program listings information to the user equipment (e.g., over communications path 158 or the like).

Step 176 may involve informing the  
5 interactive television application (e.g., the interactive wagering application, the interactive television program guide, etc.) of the change in the lineup of currently available video feeds through other suitable mechanisms (e.g., using data transmission or  
10 communications techniques between distribution facility 154 and the application that do not require the updating of program listings information).

Information on the electronic wagering activities of users may be gathered by system 10 in  
15 real time. This information may be provided to users to promote wagering services or may be used by television producers or other entities for use in planning and managing television coverage.

An illustrative screen 178 including real-  
20 time statistical information on user wagering activities that may be presented to users on user equipment is shown in FIG. 15. Screen 178 may include information on the electronic wagering activities of users who are placing wagers at transaction processing  
25 and subscription management system 24. For example, information 184 may be provided on the total dollar amount being wagered. Information 186 may be provided on the total number of wagers being placed. Information 188 may be included on the most popular  
30 wager type. Information 190 may also be included on

the most common wager amount. These types of statistical wagering information are merely illustrative. Any suitable wagering statistics may be provided to the user or any other entity if desired.

5           In the screen 178 that is shown in FIG. 15, the statistical information that is displayed is aggregated data for multiple racetracks (e.g., all racetracks served by system 10). An option 180 may be provide that allows users to view statistical  
10 information for other combinations of racetracks or the like. As indicated by arrows 182, the user may use right and left remote control arrow keys to select which combination of racetracks or other criteria are used in presenting the statistical information. For  
15 example, the user may use right and left arrow keys to select a particular racetrack or tote for which the user desires to view real-time statistical wagering information. Screens such as screen 178 may be presented to the user by the interactive wagering  
20 application or by any other suitable application.

          If the user desires to compare statistical information associated with multiple tracks, the user may select option 192. An illustrative screen 194 that may be displayed for the user on the user's equipment  
25 when the user selects option 192 of FIG. 15 is shown in FIG. 16. Screen 194 may be displayed by the interactive wagering application or other suitable application. Screen 194 may contain information 196 such as graphical information (e.g., bar graphs, pie  
30 charts, tables, etc.) that compares real-time

statistical wagering information from several tracks. For example, information on the number of wagers that have been placed on a particular day at each track may be displayed. This allows the user to see whether  
5 there is currently a particularly popular track. If desired, real-time wagering statistics such as the number of wagers being placed at each track or other suitable statistics may include information on wagers made using on-site equipment (e.g., wagers placed in  
10 person at the racetracks or the like).

If the user is interested in viewing additional statistical information on wagers, the user may select option 200 using highlight region 198. If the user wishes to return to television viewing or  
15 other activities, the user may select exit option 202 using highlight region 198.

The user may be presented with alerts based on real-time wagering statistics. The user may, for example, establish certain alert criteria. When the  
20 alert criteria are satisfied, an alert message may be automatically presented to the user.

An illustrative screen 204 that contains an alert message 206 is shown in FIG. 17. In the illustrative example of FIG. 17, alert message 206 is  
25 being displayed as an overlay on top of the video 208 for a television program that the user is currently viewing. This is merely illustrative. Alert messages may be provided to the user using any suitable technique.

Alert messages may be used to alert the user to the occurrence of any suitable events related to real-time wagering statistics. For example, an alert such as alert 206 may be used to inform the user when  
5 the current wagering pool at a particular track has exceeded a user-defined threshold, as shown in FIG. 17. This is merely an illustrative criteria. Any suitable real-time wagering statistic may be used as an alert criteria if desired.

10 Real-time wagering statistics may be presented to users in graphic form as shown in FIGS. 15 and 16, may be used to present alerts to the user as shown in FIG. 18, may be used by television producers and the like (e.g., to gauge the type of coverage to  
15 devote to a particular track, etc.), may be used in allocating bandwidth between different video feeds, or may be used for any other suitable purpose.

Illustrative steps involved in gathering and using real-time statistical wagering data are shown in  
20 FIG. 18. At step 210, the system 10 may gather statistical wagering information on the wagering activities of wagerers. Information may be gathered in real time. Information on wagers placed with transaction processing and subscription management  
25 system 24 may be collected using computer equipment 26. Information on wagers placed at tracks may be collected using totalizators 30 or other equipment associated with the racetracks. Information on wagers placed through off-track betting facilities or the like may  
30 also be handled using totalizators 30 or other suitable

equipment. If desired, real-time data may be collected by polling the user's equipment. For example, polling messages may be sent to the user's set-top box or other equipment to determine which wagers have been placed  
5 from that location. The real-time statistical wagering information may involve gathering information on which wagers are placed, where the wagers are placed, pool amounts, etc.

At step 212, users may be allowed to  
10 interactively access the statistical information. For example, the interactive wagering application or other suitable application may provide the user with selectable on-screen options on the user's equipment that allow the user to selectively view desired real-  
15 time statistical information.

At step 214, user's may be provided with alerts based on the statistical wagering information. The user may establish criteria for such alerts by interacting with appropriate setup options. Such  
20 options may be provided to the user by the interactive wagering application or other suitable application. For example, the user may be provided with setup options that involve adjusting real-time wagering statistics alert criteria when the user selects an  
25 option such as setup option 62 of FIG. 2.

At step 216, real-time statistical information on the wagering activities of wagerers may be provided to television producers or other suitable entities. Television producers may be associated with,  
30 for example, video production systems such as video

production system 14 of FIG. 1 or studios such as studio 16. At system 14 (or studio 16), the real-time data may be used to determine which tracks or races should be covered during a wagering-related television broadcast (e.g., for a wagering television channel service or the like). If a large amount of wagering activity involves a particular horse, television coverage may be geared to that horse. Viewers of the content provided by system 14 may be informed of the real-time statistics (e.g., using verbal commentary in the content, using graphics, etc.).

At step 218, system 10 may allocate bandwidth based on the real-time statistical wagering information. For example, if it is determined that a particular race or racetrack is not attracting much attention, feed distribution equipment 162 (FIG. 13) may drop the video feed that includes coverage for that race or racetrack, so that the bandwidth that would otherwise be used by that video feed may be used elsewhere (e.g., for other video feeds). If desired, the allocation of bandwidth for video feeds may be based on real-time statistical information on the wagering activities of wagerers (including home users, off-track wagerers at off-track wagering facilities, and wagerers at racetracks) and the video feed demand characteristics described in connection with FIG. 14.

Although described primarily in the context of video feeds and real-time statistics for wagering applications, the present invention may be used for any suitable interactive application. For example, the

features of the present invention may be used for  
managing the distribution of video feeds and for  
gathering statistical information involving the content  
and features of interactive television applications  
5 such as interactive television program guides,  
interactive video-on-demand applications, interactive  
home shopping or banking applications, etc.

The foregoing is merely illustrative of the  
principles of this invention and various modifications  
10 can be made by those skilled in the art without  
departing from the scope and spirit of the invention.

What Is Claimed is:

1. A method for managing the distribution of video feeds to users at user equipment from a distribution facility, comprising:

monitoring the demand of the users for each of the multiple video feeds; and

managing the distribution of the multiple video feeds to the user equipment from the distribution facility based on the monitored demand.

2. The method defined in claim 1 further comprising polling the user equipment for information on the demand of the users.

3. The method defined in claim 1 further comprising polling the user equipment from the distribution facility for information on the demand of the users.

4. The method defined in claim 1 further comprising determining the demand of the users by monitoring channel change commands.

5. The method defined in claim 1 further comprising determining the demand of the users by monitoring channel change commands at the distribution facility.



6. The method defined in claim 1 further comprising determining the demand of the users by monitoring pay-per-view orders.

7. The method defined in claim 1 further comprising determining the demand of the users by monitoring pay-per-view orders at the distribution facility.

8. The method defined in claim 1 further comprising determining the demand of the users by monitoring users' interactions with an interactive television application.

9. The method defined in claim 1 further comprising determining the demand of the users by monitoring users' interactions with an interactive television application at the distribution facility.

10. The method defined in claim 1 further comprising determining the demand of the users by monitoring users' interactions with an interactive wagering application.

11. The method defined in claim 1 further comprising determining the demand of the users by monitoring users' interactions with an interactive wagering application at the distribution facility.

12. The method defined in claim 1 further comprising dropping video feeds based on the demand of the users.

13. The method defined in claim 1 further comprising using feed distribution equipment at the distribution facility to manage the distribution of the video feeds to the users.

14. The method defined in claim 1 further comprising informing users when video feeds are not available.

15. The method defined in claim 1 further comprising updating program schedule information to reflect which video feeds are available.

16. The method defined in claim 1 further comprising displaying on-screen options on the user equipment that reflect which video feeds are available.

17. The method defined in claim 1 further comprising informing an interactive television application when certain ones of the video feeds are not available due to the demand of the users.

18. The method defined in claim 1 further comprising informing an interactive wagering application when certain ones of the video feeds are not available due to the demand of the users.

19. The method defined in claim 1 wherein at least one of the video feeds includes a wagering television channel.

20. The method defined in claim 1 further comprising:

allowing the user to place wagers from the user equipment using an interactive wagering application; and

providing a wagering television channel over at least one of the video feeds.

21. The method defined in claim 1 wherein at least two of the video feeds are wagering-related.

22. The method defined in claim 1 wherein at least some of the video feeds correspond to video feeds associated with particular racetracks.

23. The method defined in claim 1 wherein at least two of the video feeds carry horse racing television channels.

24. The method defined in claim 1 further comprising gathering real-time statistical information on wagers being placed by the users.

25. The method defined in claim 1 further comprising:

gathering real-time statistical information on wagers being placed by the users; and using the real-time statistical information to manage the distribution of the video feeds.

26. The method defined in claim 1 wherein at least one of the video feeds includes information on a horse race.

27. The method defined in claim 1 further comprising using the user equipment to provide a given one of the users with an opportunity to place an electronic wager.

28. The method defined in claim 1 wherein the user equipment includes a set-top box, the method further comprising using the set-top box to provide at least one of the users with an opportunity to create and place an electronic wager.

29. The method defined in claim 1 wherein the user equipment includes a cellular telephone, the method further comprising using the cellular telephone to provide at least one of the users with an opportunity to create and place an electronic wager.

30. The method defined in claim 1 wherein the user equipment includes a handheld computer, the method further comprising using the handheld computer

to provide at least one of the users with an opportunity to create and place an electronic wager.

31. The method defined in claim 1 wherein the user equipment includes a personal computer, the method further comprising using the personal computer to provide at least one of the users with an opportunity to create and place an electronic wager.

32. The method defined in claim 1 wherein the user equipment includes user television equipment, the method further comprising using the user television equipment to provide at least one of the users with an opportunity to create and place an electronic wager.

33. The method defined in claim 1 further comprising sending an electronic wager to a transaction processing and subscription management system over a communications path connected to the user equipment.

34. The method defined in claim 1 further comprising gathering real-time statistical information on the wagering activities of wagerers at racetracks and using the statistical information in managing the distribution of the video feeds.

35. An interactive wagering system comprising a distribution facility that distributes multiple video feeds to users at user equipment, wherein the distribution facility is configured to:

monitor the demand of the users for each of the multiple video feeds; and

manage the distribution of the multiple video feeds to the user equipment from the distribution facility based on the monitored demand.

36. The system defined in claim 35 wherein the distribution facility is further configured to poll the user equipment for information on the demand of the users.

37. The system defined in claim 35 wherein the user equipment includes a set-top box and wherein the distribution facility is further configured to poll the set-top box for information on the demand of the users.

38. The system defined in claim 35 wherein the distribution facility is further configured to determine the demand of the users by monitoring channel change commands.

39. The system defined in claim 35 wherein the distribution facility is further configured to determine the demand of the users by monitoring channel change commands provided to the distribution facility from the user equipment over a communications path.

40. The system defined in claim 35 wherein the distribution facility is further configured to

determine the demand of the users by monitoring pay-per-view orders.

41. The system defined in claim 35 wherein the distribution facility is further configured to determine the demand of the users by monitoring pay-per-view orders received at the distribution facility.

42. The system defined in claim 35 wherein the user equipment is configured to monitor users' interactions with an interactive television application to determine the demand of the users for each of the video feeds.

43. The system defined in claim 35 wherein the distribution facility is further configured to determine the demand of the users by monitoring users' interactions with an interactive television application.

44. The system defined in claim 35 wherein the user equipment is configured to monitor users' interactions with an interactive wagering application to determine the demand of the users for each of the video feeds.

45. The system defined in claim 35 wherein the distribution facility is further configured to determine the demand of the users by monitoring users' interactions with an interactive wagering application.

46. The system defined in claim 35 wherein the distribution facility is further configured to drop video feeds based on the demand of the users.

47. The system defined in claim 35 wherein the distribution facility includes feed distribution equipment that is used to manage the distribution of the video feeds to the users.

48. The system defined in claim 35 wherein the distribution facility is further configured to inform users when video feeds are not available.

49. The system defined in claim 35 wherein the distribution facility is further configured to update program schedule information to reflect which video feeds are available.

50. The system defined in claim 35 wherein the user equipment is configured to display on-screen options that reflect which video feeds are available.

51. The system defined in claim 35 wherein the user equipment is configured to use an interactive program guide to display updated information for the video feeds.

52. The system defined in claim 35 wherein the distribution facility is configured to inform an interactive wagering application that is implemented



using the user equipment when certain ones of the video feeds are not available due to the demand of the users.

53. The system defined in claim 35 wherein at least one of the video feeds includes a wagering television channel.

54. The system defined in claim 35 wherein the user equipment is configured to allow the users to place wagers from the user equipment using an interactive wagering application and wherein the distribution facility is configured to provide a wagering television channel over at least one of the video feeds.

55. The system defined in claim 35 wherein the distribution facility is further configured to provide wagering-related video feeds as at least two of the video feeds.

56. The system defined in claim 35 wherein the distribution facility is further configured to provide video feeds associated with particular racetracks.

57. The system defined in claim 35 wherein the distribution facility is further configured to provide at least two of video feeds that carry horse racing television channels.

58. The system defined in claim 35 wherein the distribution facility is further configured to gather real-time statistical information on wagers being placed by the users.

59. The system defined in claim 35 wherein the distribution facility is further configured to:  
gather real-time statistical information on wagers being placed by the users; and  
use the real-time statistical information to manage the distribution of the video feeds.

60. The system defined in claim 35 wherein the distribution facility is further configured to provide at least one video feed that includes information on a horse race.

61. The system defined in claim 35 wherein the user equipment of a given one of the users is configured to provide the given one of the users with an opportunity to place an electronic wager.

62. The system defined in claim 35 wherein the user equipment includes a set-top box that is configured to provide at least one of the users with an opportunity to create and place an electronic wager.

63. The system defined in claim 35 wherein the user equipment includes a cellular telephone that

is configured to provide at least one of the users with an opportunity to create and place an electronic wager.

64. The system defined in claim 35 wherein the user equipment includes a handheld computer that is configured to provide at least one of the users with an opportunity to create and place an electronic wager.

65. The system defined in claim 35 wherein the user equipment includes a personal computer that is configured to provide at least one of the users with an opportunity to create and place an electronic wager.

66. The system defined in claim 35 wherein the user equipment includes user television equipment that is configured to provide at least one of the users with an opportunity to create and place an electronic wager.

67. The system defined in claim 35 further comprising a transaction processing and subscription management system that is configured to receive electronic wagers from the user equipment over a communications path connected to the user equipment.

68. The system defined in claim 35 wherein the distribution facility is further configured to:  
gather real-time statistical information  
on the wagering activities of wagers at racetracks;  
and

use the statistical information in managing the distribution of the video feeds.

69. A method for using real-time statistical wagering information on the wagering activities of wagerers, comprising:

gathering statistical information on the wagering activities of wagerers in real time;

displaying the statistical information to users at user equipment in real time; and

displaying on-screen options at the user equipment that allow the user to interact with the statistical information in real time.

70. The method defined in claim 69 wherein the statistical information includes information on the total dollar amount of wagers placed by wagerers.

71. The method defined in claim 69 wherein the statistical information includes comparison information for multiple racetracks.

72. The method defined in claim 69 further comprising displaying an on-screen option on the user equipment that allows the user to request additional statistical wagering information.

73. The method defined in claim 69 further comprising allowing the user to use the user equipment

to establish alert criteria to provide alerts to the user based on the statistical wagering information.

74. The method defined in claim 69 further comprising displaying alerts to the user based on the statistical wagering information.

75. The method defined in claim 69 further comprising providing the statistical information to a television producer.

76. The method defined in claim 69 further comprising providing the statistical information to a television producer in real time.

77. The method defined in claim 69 further comprising providing the statistical information to a television producer at a video production system in real time.

78. The method defined in claim 69 further comprising:

providing video feeds to the user equipment; and  
allocating video feed bandwidth based on the statistical information.

79. A system comprising a distribution facility for distributing television programming to

users at user equipment, wherein the distribution facility and user equipment are configured to:

- gather statistical information on the wagering activities of wagerers in real time;
- display the statistical information to the users at the user equipment in real time; and
- display on-screen options at the user equipment that allow the user to interact with the statistical information in real time.

80. The system defined in claim 79 wherein the statistical information includes information on the total dollar amount of wagers placed by wagerers.

81. The system defined in claim 79 wherein the statistical information includes comparison information for multiple racetracks.

82. The system defined in claim 79 wherein the user equipment is configured to display an on-screen option on the user equipment that allows the user to request additional statistical wagering information.

83. The system defined in claim 79 wherein the user equipment is configured to allow the user to use the user equipment to establish alert criteria to provide alerts to the user based on the statistical wagering information.

84. The system defined in claim 79 wherein the user equipment is configured to display alerts to the user based on the statistical wagering information.

85. The system defined in claim 79 wherein the distribution facility is further configured to provide the statistical information to a television producer.

86. The system defined in claim 79 wherein the distribution facility is further configured to provide the statistical information to a television producer in real time.

87. The system defined in claim 79 wherein the distribution facility is further configured to provide the statistical information to a television producer at a video production system in real time.

88. The system defined in claim 79 wherein the distribution facility is further configured to:  
provide video feeds to the user  
equipment; and  
allocate video feed bandwidth based on  
the statistical information.

89. The system defined in claim 79 wherein the user equipment is further configured to provide the user with an interactive television program guide.

90. The system defined in claim 79 wherein the user equipment is further configured to provide the user with information on available video feeds using an interactive wagering application.



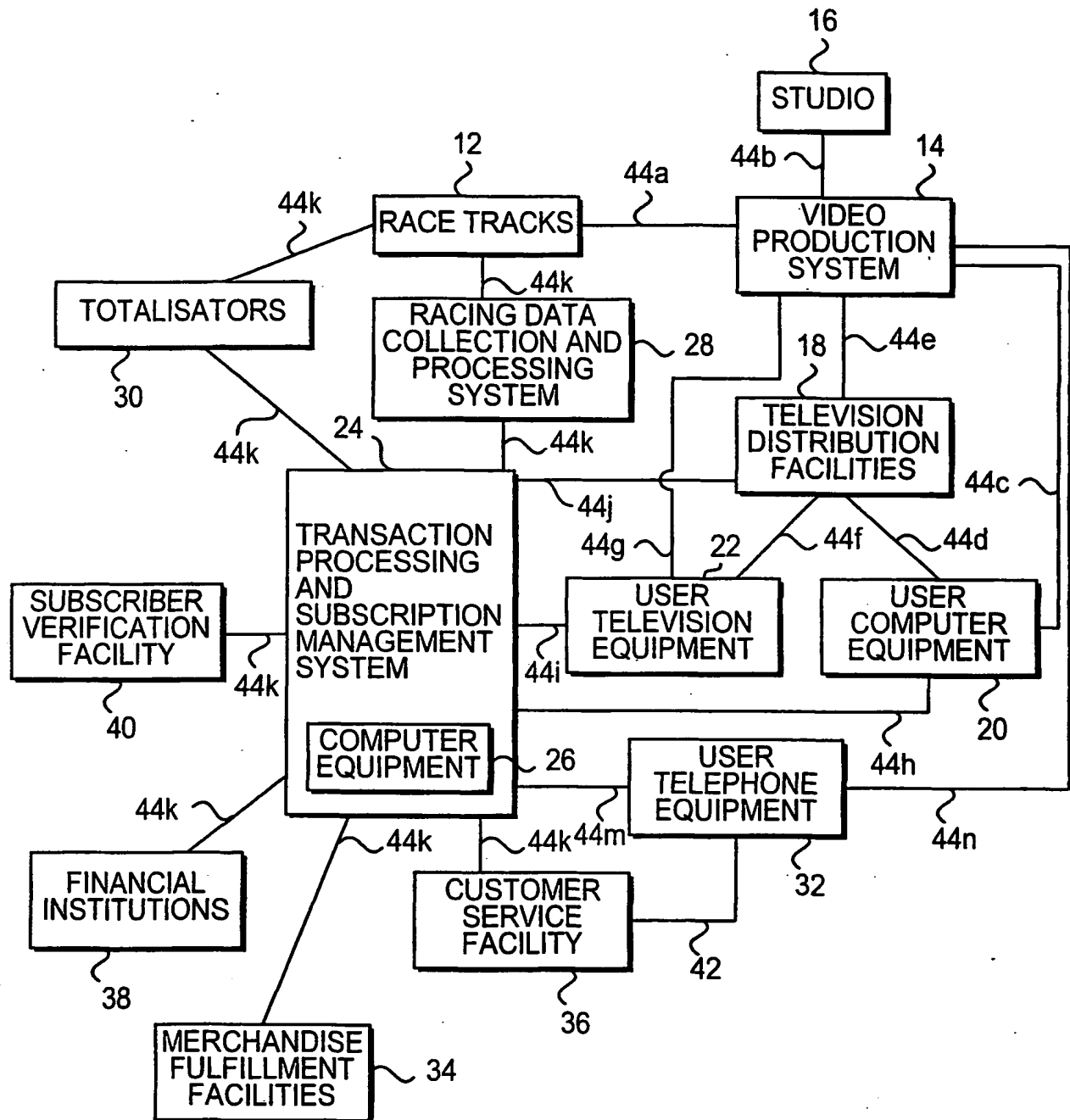
10

FIG. 1

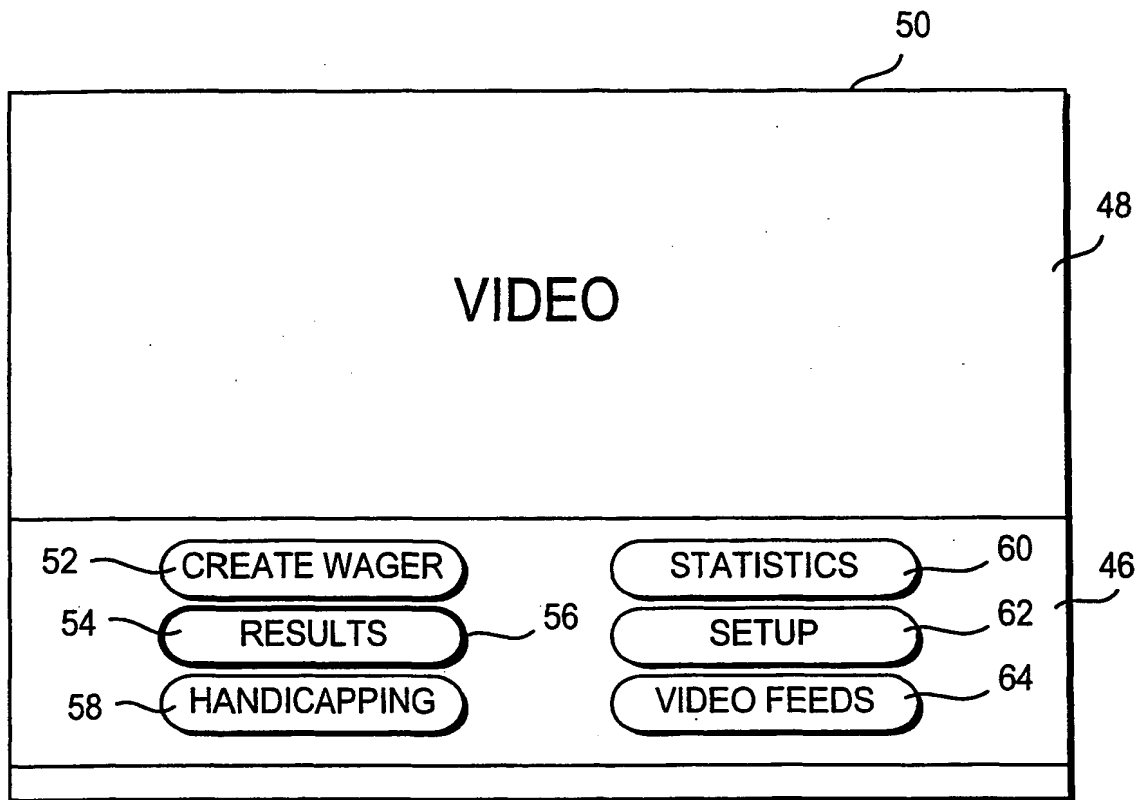


FIG. 2

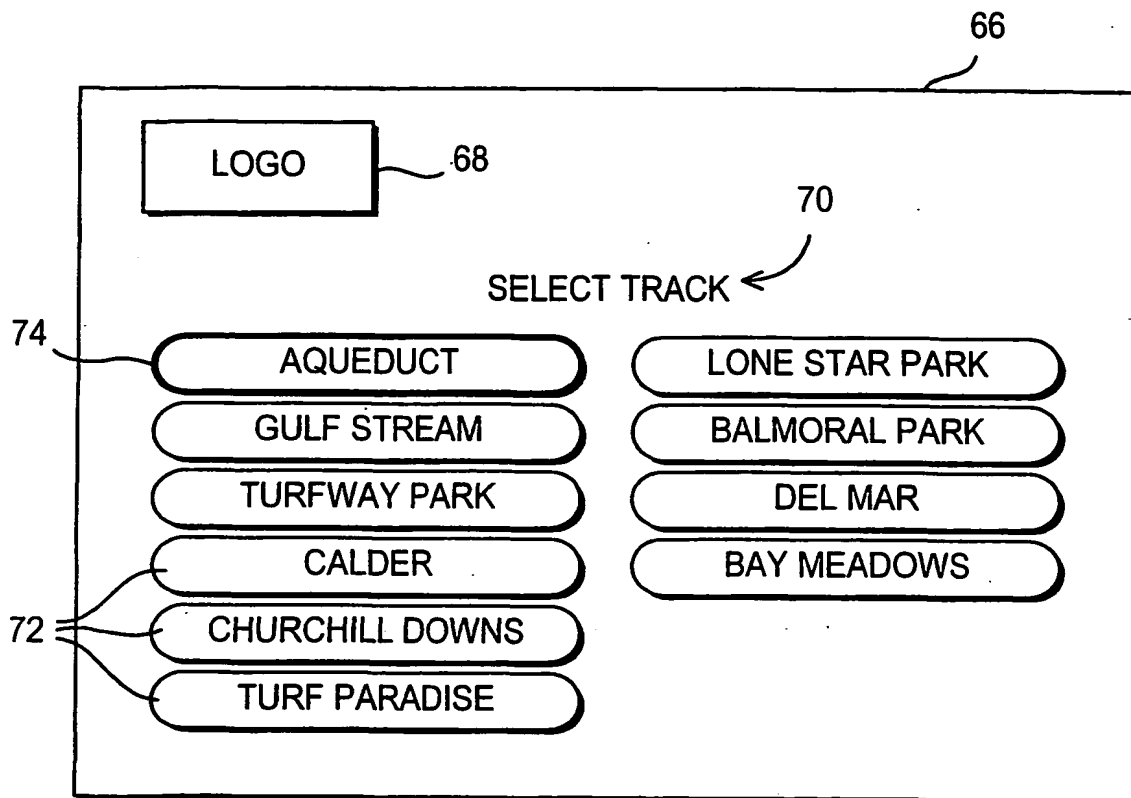


FIG. 3

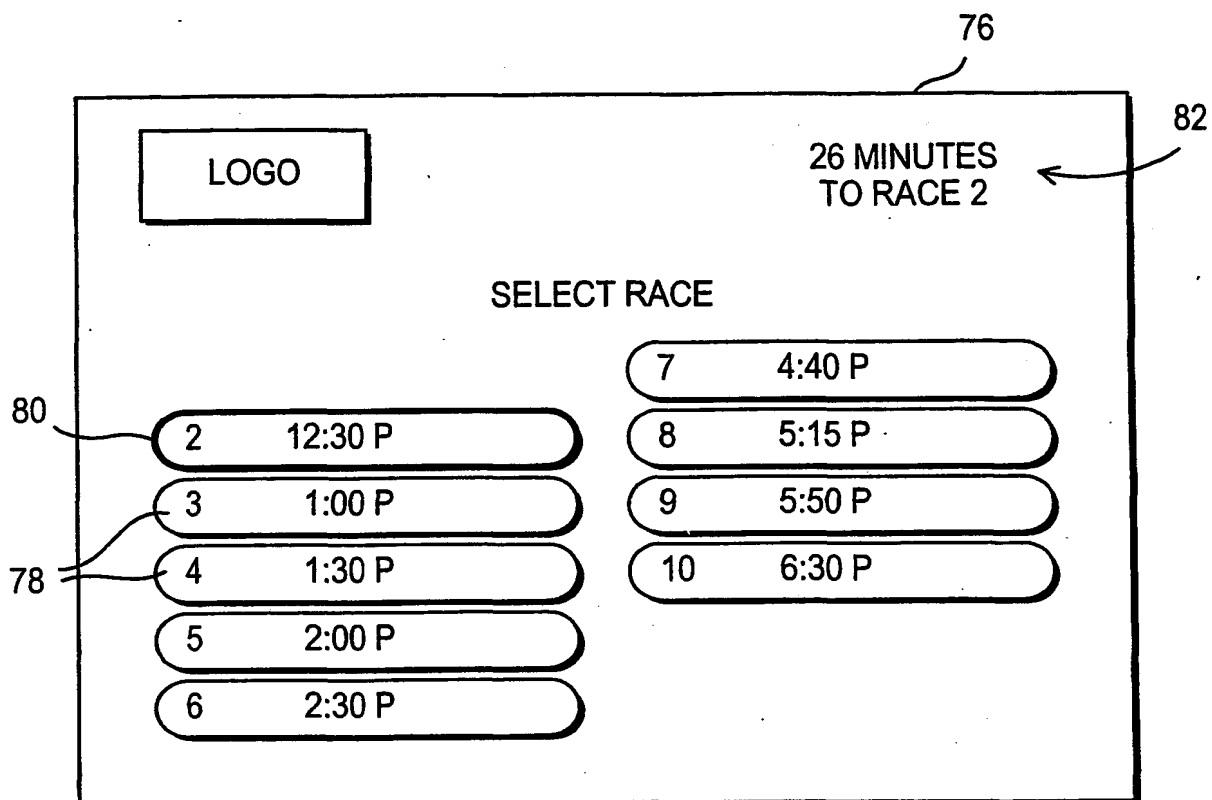
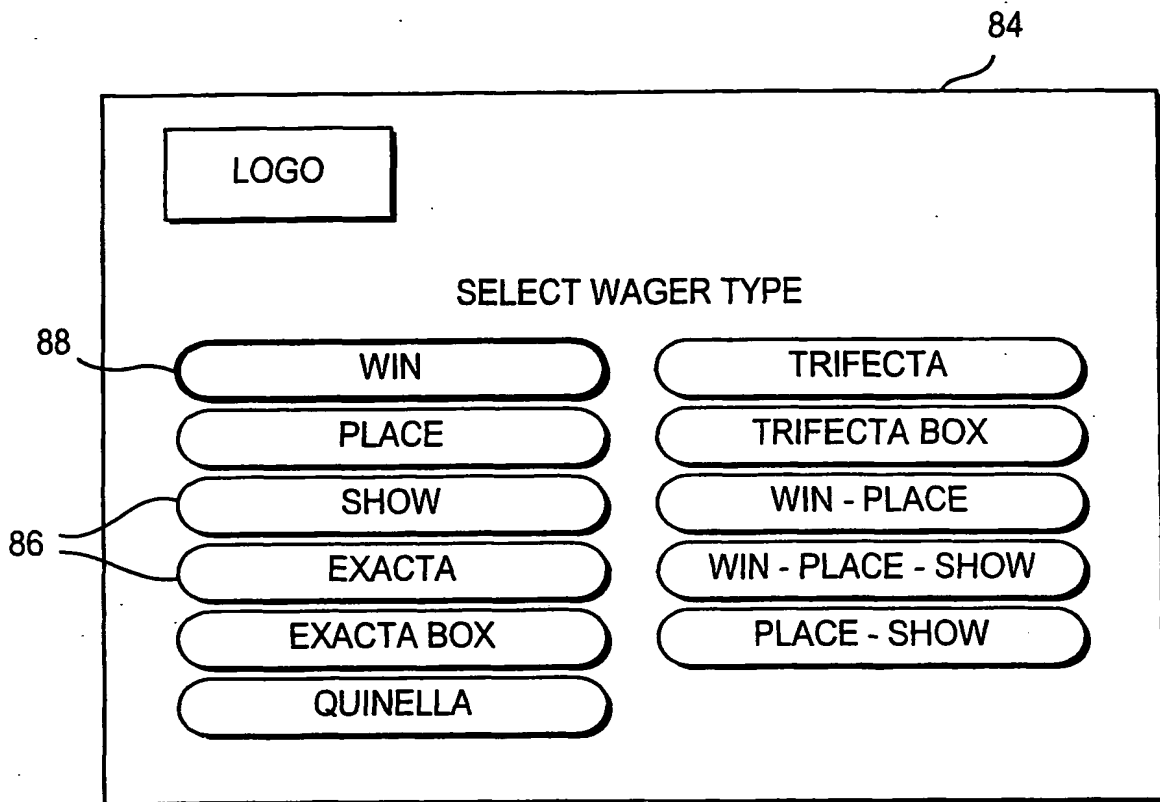
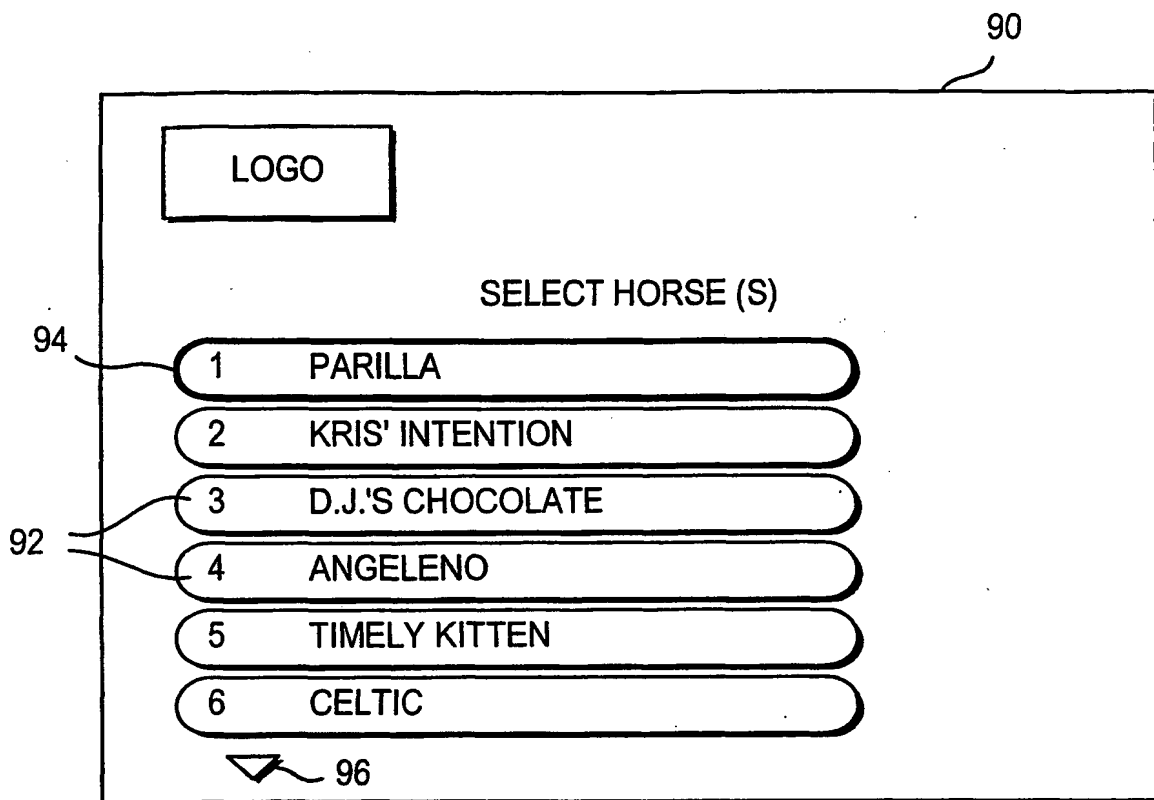
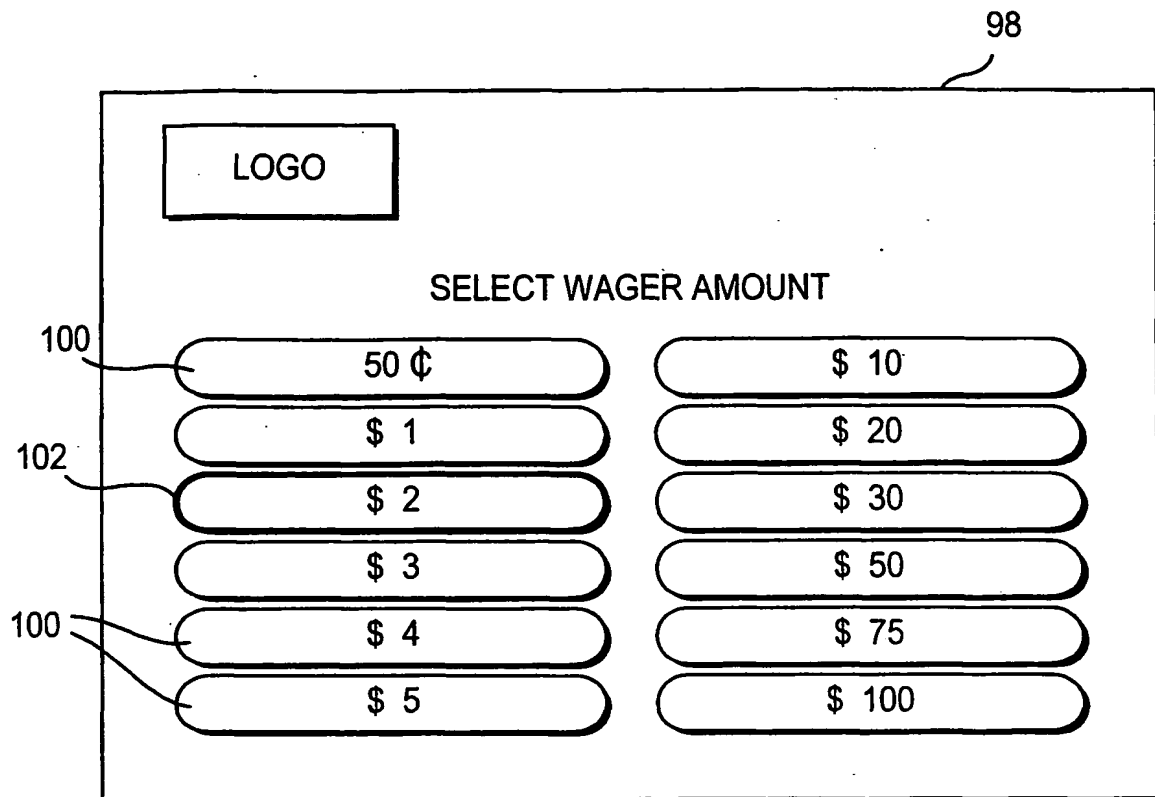


FIG. 4

*FIG. 5*

**FIG. 6**

*FIG. 7*

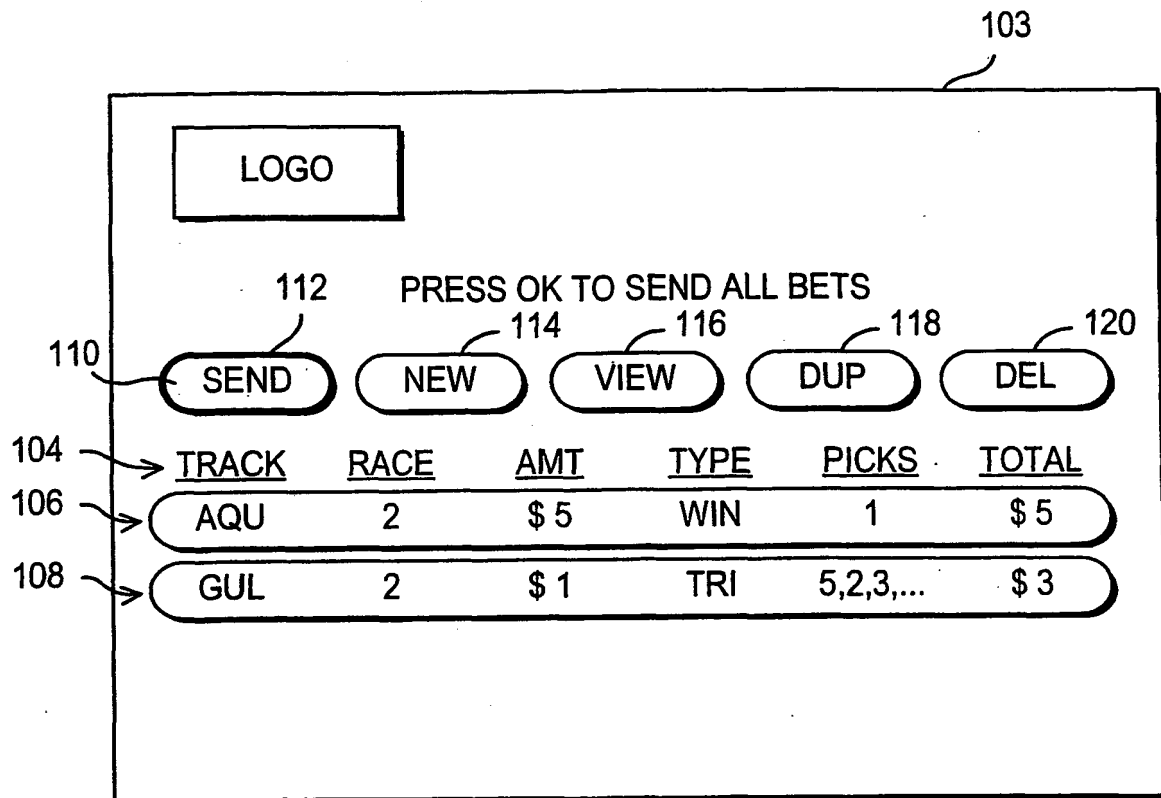


FIG. 8



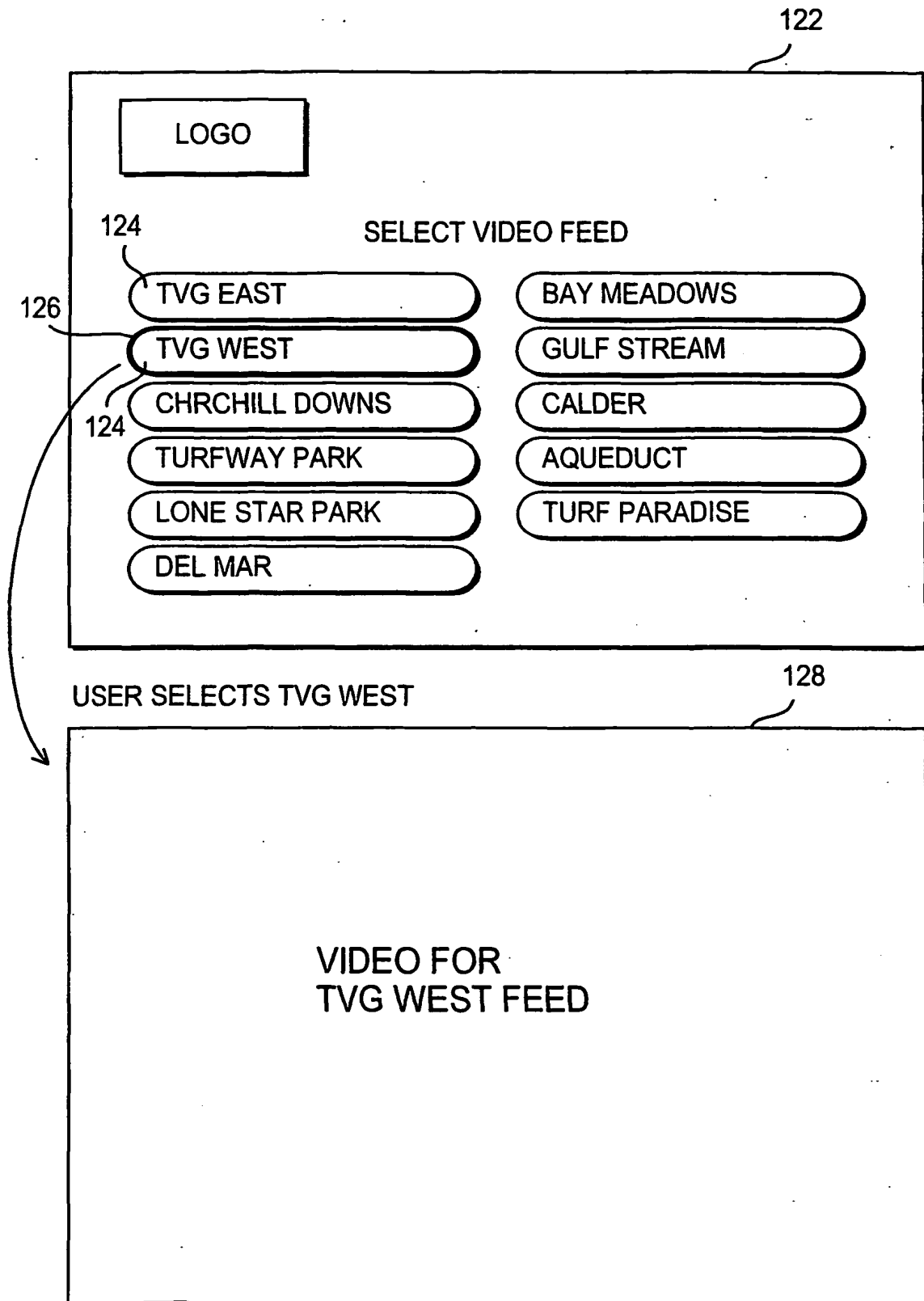
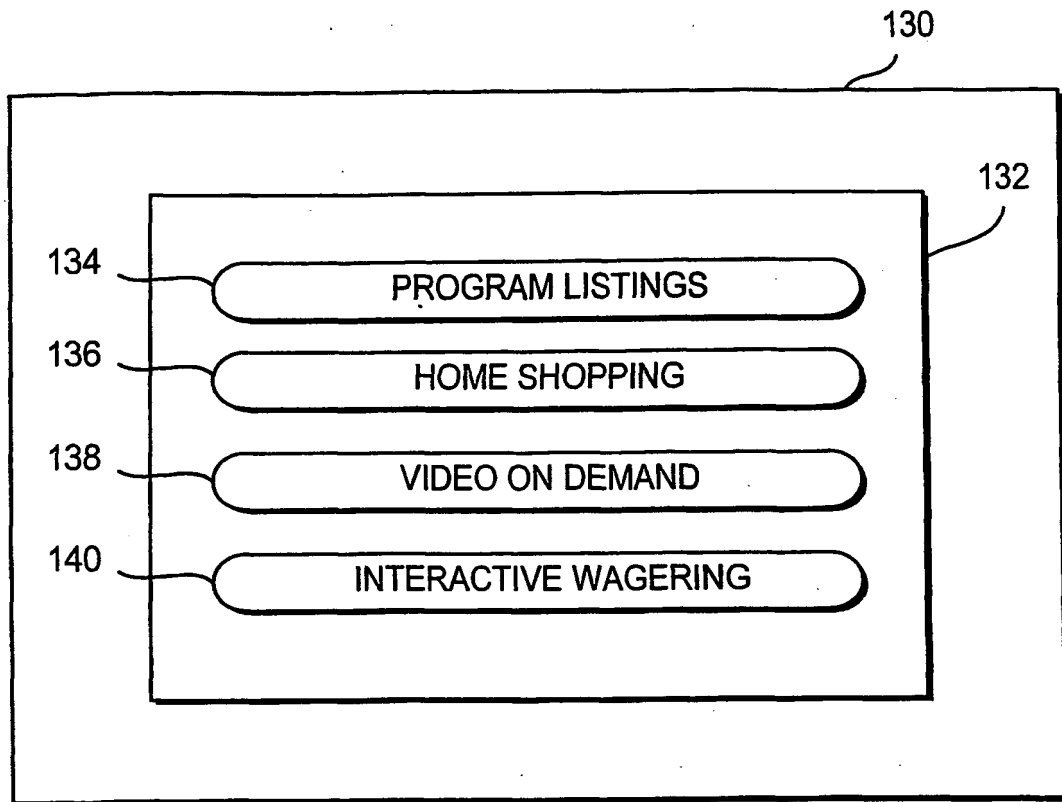


FIG. 9



**FIG. 10**

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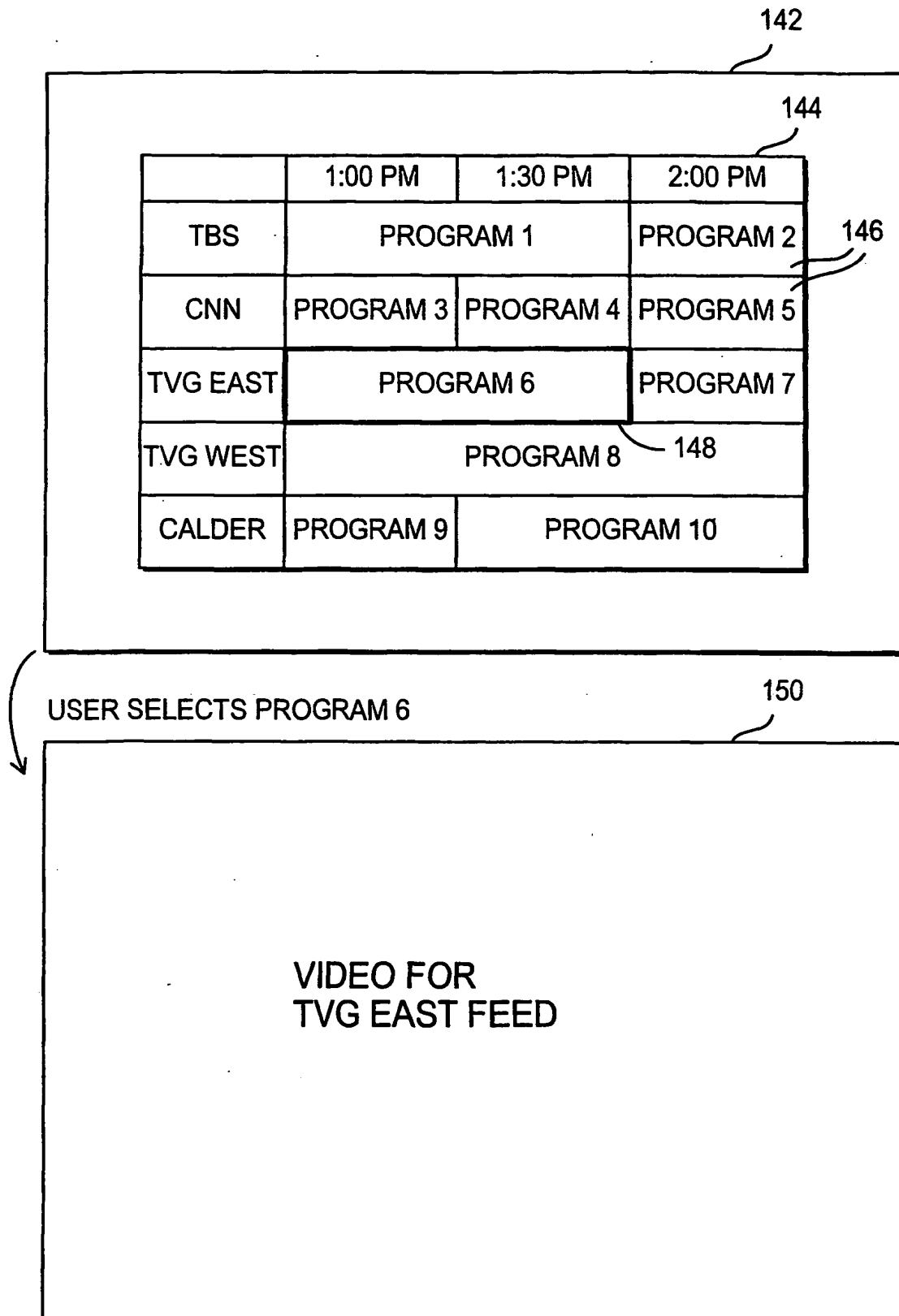
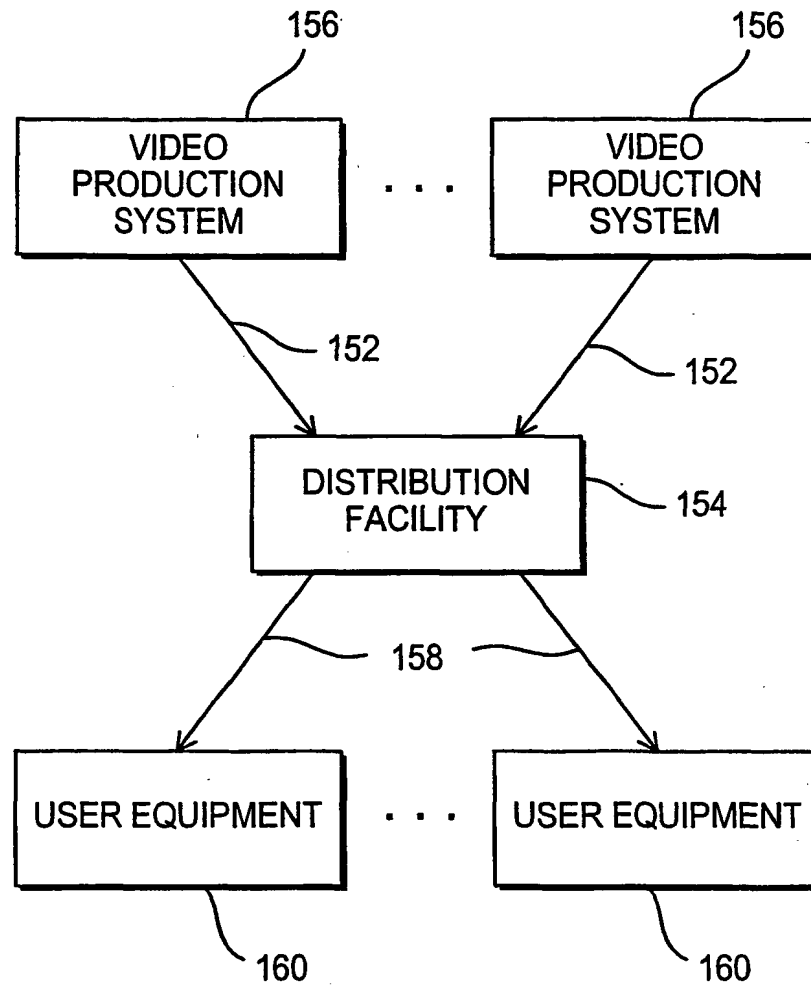
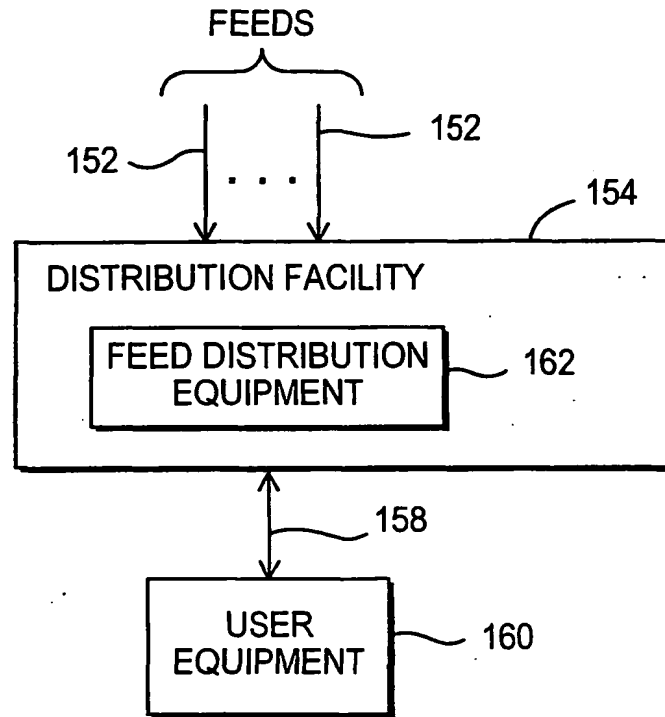


FIG. 11

**FIG. 12**

**FIG. 13**

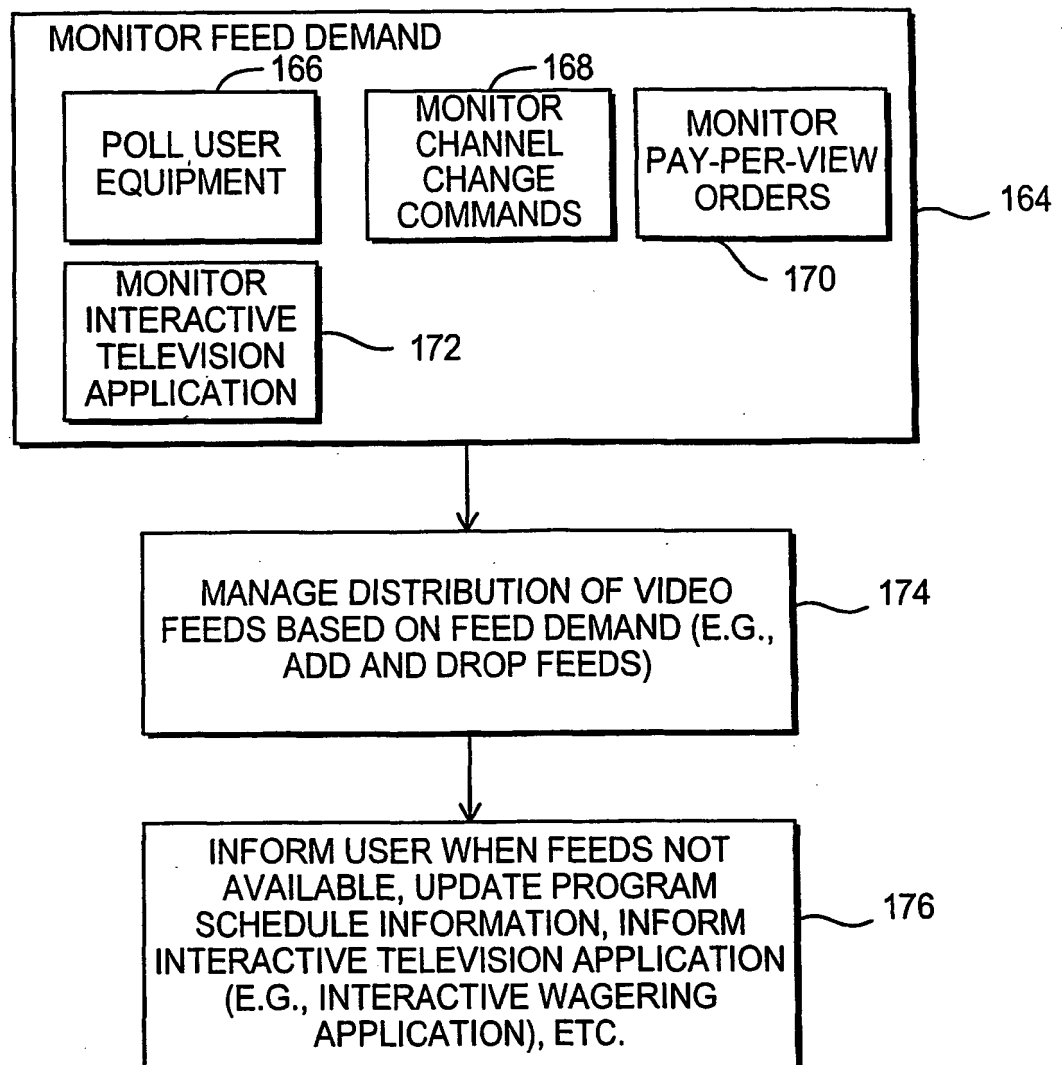
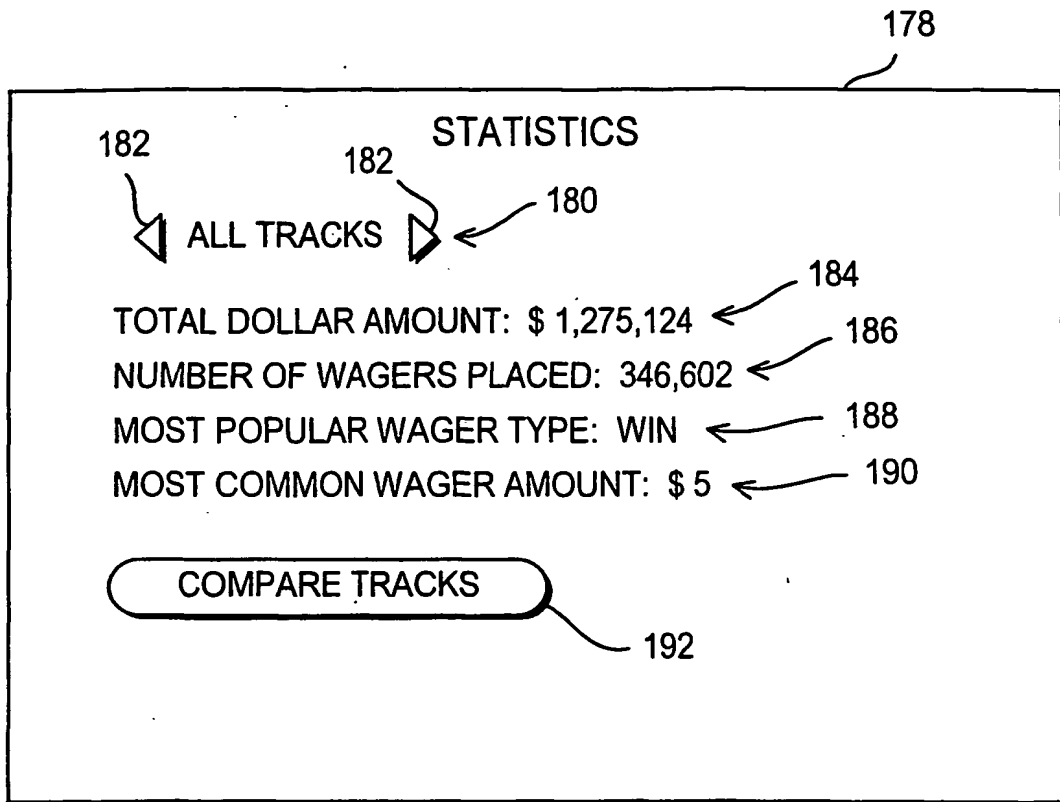
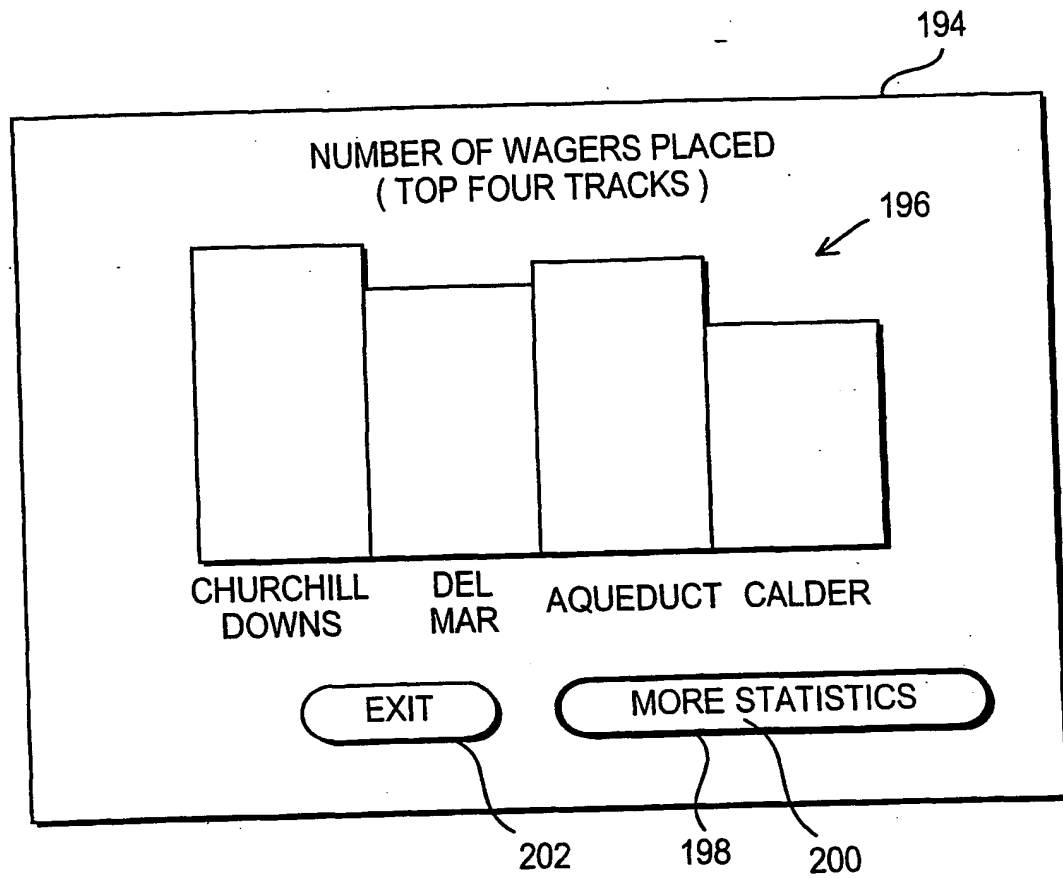
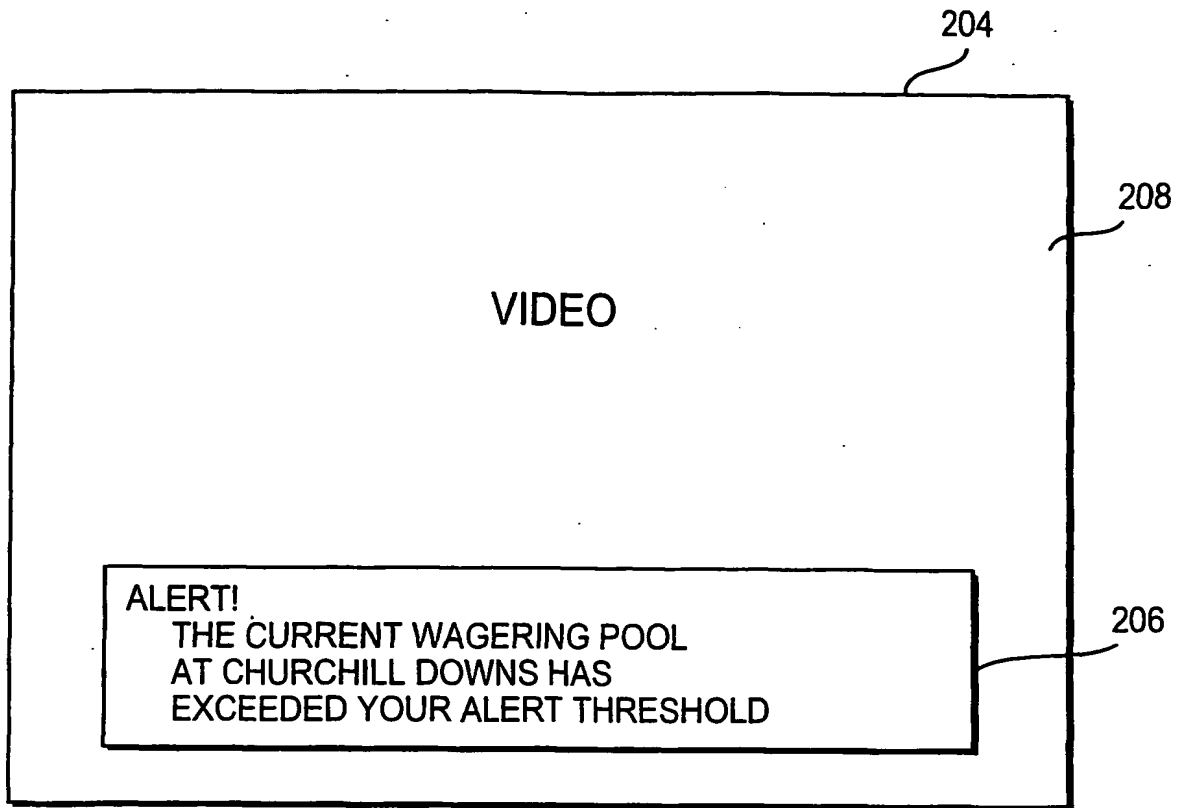


FIG. 14

**FIG. 15**

**FIG. 16**





**FIG. 17**

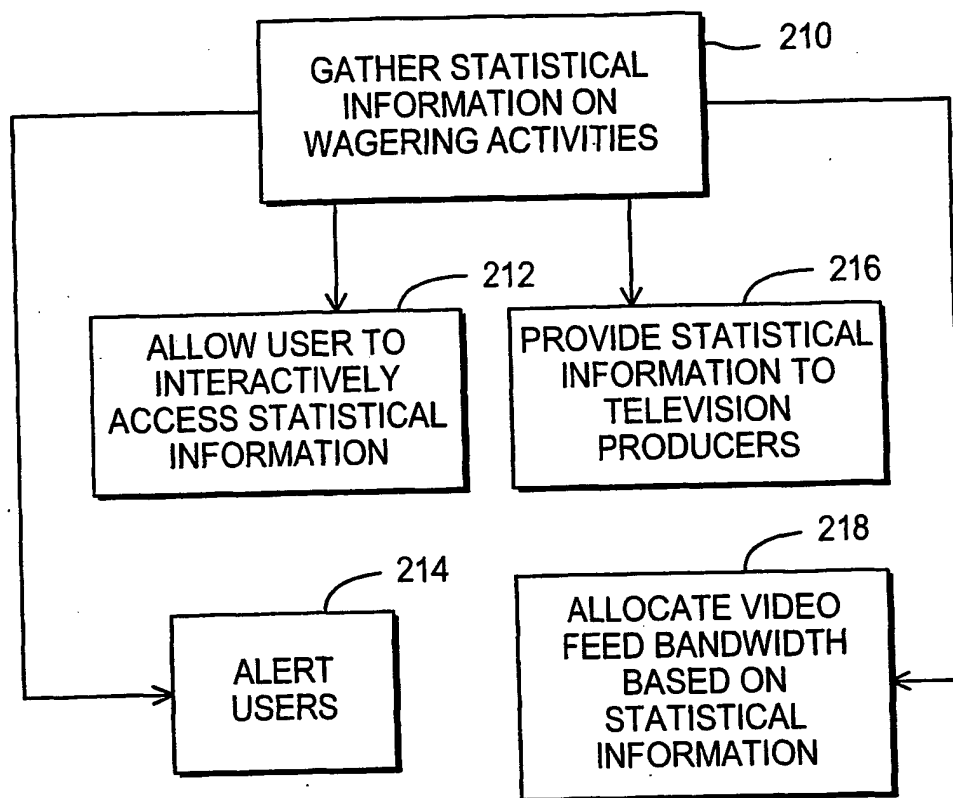


FIG. 18